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TEACHING READING AND LANGUAGE SKILLS IN GRADES TWO AND THREE.

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Descriptors-*BASIC READING, *BEGINNING READING, COMPOSITION SKILLS (LITERARY), *INITIAL TEACHING ALPHABET, LANGUAGE ARTS, LANGUAGE DEVELOPMENT, *LANGUAGE EXPERIENCE APPROACH, *PRIMARY GRADES, READING ACHIEVEMENT, READING COMPREHENSION, SPELLING, VOCABULARY DEVELOPMENT

The Oakland County, Michigan, first-grade study of the effectiveness of three approaches to beginning reading was extended to the second and third grades to investigate differences in their effects on reading and related language development. Each of 11 research teams chose three classrooms which used either the Initial Teaching Alphabet approach (i/t/a), the language experience approach (LE), or the basal reader approach (BR). Participating teachers were assisted by preschool conferences, biweekly meetings, supervision, and consultant services. Data on pupil achievement in reading and related language development were gathered from standardized test scores, reading records, oral and written compositions, and scores on a test of creative thinking. Results showed that the academic achievement of the i/t/a and LE groups equalled that of the BR group. The i/t/a group scored highest on spelling and word study. The LE group was superior to the BR group on word recognition, spelling, and paragraph comprehension. The LE and i/t/a groups read more books than the BR group, but the BR group had better knowledge of the mechanics of English usage. Differences between the i/t/a and LE groups were negligible. Differences in vocabulary development were inconclusive, and differences in creativity were negigible for the three groups. Appendixes and a bibliography are included. (NS)

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HARRY T. HAHN

U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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U. S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE
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TEACHING READING AND LANGUAGE SKILLS

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The research reported herein was performed pursuant to a contract with the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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Among those who made an important contribution to the project were:

...Mr. Philip Hilaire, Oakland Schools reading consultant, who provided teachers with instructions as to the ITA program.

...Dr. Loyal Joos, the research director of Oakland Schools, who assisted with the research planning.

...Mr. Craig Fairbrother, Oakland University Computing Center, who provided assistance with programming and organizing the statistical data.

A special note of appreciation must go to the assistance provided by Mrs. Ethel McCullough, project coordinator, who patiently and painstakingly collected the data and established and maintained liaison with all of the teachers who were involved in the program.

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CHAPTER I

OBJECTIVES OF THE STUDY

INTRODUCTION

The climate of the early sixties was most conducive to research concerned with beginning reading instruction. Fuel for dissatisfaction with widely used basal materials was provided by linguists who felt that attention to the language patterns of boys and girls was often ignored in the materials which were employed. Useful research by Loban, Strickland and others had offered insights regarding the nature of the language of young children and, once more, had pointed to the importance of oral language development in the early stages of learning to read. Sir James Pittman had started to make a strong bid for the use of the simplified alphabet as a transitional device for introducing boys and girls to printed materials. A three year research grant, directed by John Downing at the University of London, provided the needed momentum. Programmed instructional materials blossomed, and concern for systematic programs of skill development was widespread. Spelling textbooks focused on coding patterns, and interest in phonics programs using charts and color keys was revived. Murphy and Durrell's persistent work with reading readiness calling attention to the importance of letter names, letter sounds and applied phonics in early reading programs had received recognition. Once more, research was conducted to demonstrate that emphasis on coding practices served to make better readers.

In contrast, R. Van Allen had completed a study which suggested that children's oral and written language provided an excellent base for reading instruction. His study proved to be a needed guide to a language experience approach to reading. The individualized reading advocates worked quietly, gathering support for more attention to self-selection and self-pacing. Publishers, in turn, had started to release, in larger numbers, lists of titles of young children's books in paperback editions.

When the twenty-seven first grade research studies were started in 1964, it was evident that schools were beginning to pay more attention to children's language patterns, to more devices for code-breaking, to more structured program materials, to greater emphasis upon written composition, to more reading opportunities, to more attention to oral expression and to learning strategies which provided teachers with useful alternates to beginning reading instruction. At the close of this three-year study, it was evident that the coals which had fanned the divergent views still glowed brightly. However, it appeared that more attention was being paid to the teacher's role in the instructional process and greater significance was being given to effective in-service education. The study reported in this paper had its origin in the meetings and workshops this author conducted for primary grade teachers in Oakland County prior to 1964.

PROBLEM

The first grade report on the relative effectiveness of the use of the Initial Teaching Alphabet, Language Experience and Basic Reader Approaches to beginning reading instruction conducted in twelve school districts of Oakland County, Michigan, during the 1964-1965 school year had provided useful information and pertinent data regarding the achievement of young people in all three approaches. The results, however, could not be construed as conclusive nor could the comparative effectiveness of the three approaches in reading during the next few years be predicted. A longer and more searching evaluation of the progress of the pupils in this experiment was warranted.

The primary purpose of this study was to test the hypothesis that there would be no difference in the effects of the three approaches in reading and related language skill development when applied to the second and later to the third grade level of the elementary school program.

The important questions to be answered were:

A. What changes in behavior would be found among children in three approaches in terms of reading, writing, speaking and related language skill development at the close of grade two and at the close of grade three?

B. Would there be differences in the measured reading and writing achievement of the three populations in May of the first experimental year (1966) and in May of the second experimental year (1967)?

C. What would be the nature and scope of the curriculum adjustments necessary to accomplish effective language arts instruction in all three approaches?

DEFINITIONS

The coordinated Language Experience Approach (LEA) was designed to fully utilize and encourage the creative development of children's natural facility to communicate through listening, speaking, writing and reading. It was felt that pupils' use of English in their daily affairs, their growing personal interests and standards of enjoyment, their desire to know, as well as their ability to think critically, would provide the means necessary for the development of important reading and writing skills as well as literature appreciation. Unlike the Basic Reader Approach (BRA), adherence to sequentially prescribed materials was not followed. Instead, LEA teachers studied each child's progress as he moved toward useful language objectives. Emphasis in this approach was placed upon self-selection and self-pacing on the part of pupils in the use of instructional materials. However, provisions were made to provide intensive periods of group-directed instruction to assist young people in the development of a reading-study plan.

The Initial Teaching Alphabet Approach (ITAA) was designed at the second and third grade levels to provide opportunities for reading and related language skills development noted in the Language Experience Approach. Students who had not mastered the simplified alphabet continued to work with the wide range of ITA materials provided for the first grade classroom. In these instances, particular stress was placed upon individualized reading in ITA trade books and purposeful writing. When transition to traditional print was assured, many opportunities for purposeful reading and writing in the new alphabet were provided.

The Basic Reader Approach (BRA) was designed to provide for the sequential development of reading and related language skills in the framework provided by the authors of basal materials. Teachers in this approach made use of the suggestions from teachers' guides as well as the various materials appropriate to the level of competency of children in the classroom. Grouping practices were organized to enable children to develop the necessary skills to read, write, spell, listen and speak more effectively at a pace suitable to their capacities, skills, and abilities.

OBJECTIVES

Standard analyses of variance and covariance were used to test the significance of differences in group means when a group was defined to be a residual intact body of students. Only those young people who participated in the first grade experiment were used in the second and third grade analyses.

Analytic procedures were designed to assist in discovering answers to these questions:

1. Will there be a significant difference in the effectiveness of the three approaches to reading and related language skill development when standard measuring devices were employed at the close of the school year in 1966, and again in 1967?
    a. Will there be a difference between the measured achievement of the ITAA and LEA?
    b. Will there be a difference between the measured achievement of the ITAA and BRA?

   c. Will there be a difference between the measured achievement of the LEA and BRA?

2. Which of the three approaches would best serve the skill development of children with high and low intelligence scores?

3. How did pupils in each of the three groups perform on the Gates Primary Reading Tests and the Kuhlman-Anderson Intelligence Test, Form A, early in second grade?

4. Will there be significant differences in the oral word attack skills among the three approaches?

5. Will there be significant differences in the measured achievement of boys versus girls among the three approaches?

6. Will there be significant differences in the number and nature of the books read by pupils among the three approaches?

7. Will there be significant differences in the oral and written vocabularies, and related language skills of selected pupils among the three approaches?

8. Will there be significant differences in the linguistic maturation of pupils among the three approaches as measured by the Hunt Indices?

9. Will there be significant differences in the measured creativity of the children being taught by the three different reading approaches?

10. Will there be a significant difference in the measured creativity for boys and for girls as a group regardless of the reading approach used?

11. Will there be a difference in the curriculum adjustments which were necessary to conduct this experiment among the three approaches?

TIME SCHEDULE

This study was initiated in September, 1965, and terminated in June, 1967. A report on the second grade portion of this study was prepared for the 1967 Annual Conference of the International Reading Association at Seattle, Washington and was reprinted in The Reading Teacher, May, 1967.

CHAPTER II

RELATED RESEARCH

The twenty-seven studies sponsored by the Cooperative Research Program of the U.S. Office of Education in 1964 revealed certain characteristics of current approaches to beginning reading instruction. However, the data gathered were not conclusive, and the importance of longitudinal studies to determine the effectiveness of employed instructional practices was evident. The first grade research aroused considerable interest in beginning-to-read programs, and provided additional fuel for the controversy between those who favored code-oriented instruction and those who preferred the widely used meaning-oriented methodology. It did not, however, resolve the controversy.

Five of the first grade studies focused on the effectiveness of the use of ITA employing Sir James Pittman's simplified alphabet, a 44 character notational system. The ITA approach delayed the introduction of the unique difficulties of the traditional orthography (TO) until the primary grade children had gained confidence, skill and security in reading with the new alphabet. The studies by Fry, Hayes, Mazurkiewicz, Tanyzer and Hahn indicated that children using ITA excelled in word attack skills when compared with those using the conventional practices of basal reading programs. Essentially, these studies compared programs which accelerated the introduction of the coding devices with those which provided for gradual sequential skill development. The results were not surprising.

In the Tanyzer (23) and Hayes (10) studies, the EARLY-TO-READ ITA program was compared with 1963 Lippincott basic reading series which utilized an instructional program stressing word structure and the phonetic characteristics of words. Tanyzer reported that the Lippincott groups made significantly higher scores than ITA groups on the vocabulary subtests of the Stanford Achievement Test, Level I, but that they were similar on the other tests. Tanyzer also noted that Lippincott and EARLY-TO-READ ITA scores were significantly higher than Scott, Foresman basal reading group scores on all subtests of the achievement battery. Hayes found that Lippincott and EARLY-TO-READ ITA groups made comparable scores on the tests used and generally excelled the groups using the Scott, Foresman basic readers.

Mazurkiewicz (16) compared two modified multi-basal programs, one in TO and the other in ITA, and found that the ITA children made higher scores in Word Reading, significant at the .05 level of confidence at the close of first grade. Fry (6) failed to discover any significant differences on the Stanford Achievement Test when he compared his own Diacritical Marking System groups with the EARLY-TO-READ ITA and traditional basic reader groups. His ITA children made the highest scores on the Fry Phonetic Words, significant at the .05 level.

Hahn (8) made a comparative study of ITA, Language Experience and Basal Reading approaches to beginning reading. Unlike the studies noted above, he did not use the EARLY-TO-READ ITA program. Instead, he endeavored to compare TO with ITA by stressing in both instances an analytic study of word attack skills as well as the extensive use of children's writing and individualized reading. Essentially, the basal reading program served as a control group. Except for the Spelling subtest, the ITA and LE programs did not differ significantly on the Stanford Achievement Test; however, ITA pupils scored significantly higher on the Fry and the Gates Word Lists. ITA and LE approaches were significantly higher, at the .01 level, than the BR approach in Word Reading.

All of the first grade studies reported that ITA groups made significantly lower scores on the Spelling subtests when TO was employed. This was not considered a valid test as many of the children using ITA had spent most of their time writing with the simplified alphabet. It was evident, however, that the advantages of using ITA over TO were minimized when word attack skill training was accelerated and children were encouraged to engage in writing from their experiences.

At the close of this study, John Downing's (3) report of the three year longitudinal research of the use of ITA in England was published. His project compared ITA with TO using similar methodology. He found that children using ITA were superior to those using TO on tests of word recognition and accuracy in reading. He noted that comprehension results were not clear, although he felt that evidence showed that ITA had helped the slow learner. The most noticeable improvements were generally found among the highest achievers. Among the slowest learners, results were negligible, Downing concluded that traditional orthography in English was a serious cause of difficulty in the early stages of reading and writing. He felt his experiments provided conclusive evidence that TO slowed children's progress in reading, caused lower scores on reading tests, produced markedly inferior results in writing and had a serious effect on the size of children's written vocabulary. He cautioned that if ITA or some other transitional system were widely used, laboratory studies should be made "to shape the new system to provide greater effectiveness in transfer to reading and writing in the conventional orthography of English." (p. 297)

Four of the first grade studies focused on a language arts or language experience approach to beginning reading instruction. The common factor in these experiments was emphasis upon the importance of oral and written communication in the early stages of reading instruction. Vilscek, Morgan, and Cleland (2) compared their own Language Arts approach with the coordinated Scott, Foresman reading and language basal approach. In this experiment, the Language Arts approach made significantly higher scores on subtests concerned with Paragraph Meaning, Word Meaning, Vocabulary and Word Study Skills of the Stanford Achievement Battery. Significantly higher scores on the Gates and Karlsen Word Lists were also noted.

Stauffer (20) compared his Language Arts approach with the Basic Reader approach and found that Language Arts groups performed significantly higher on subtests identified as Word Reading, Paragraph Meaning, and Spelling. In the random sample of the populations of each group, Language Arts children scored significantly higher on tests of Reading Accuracy, Word Recognition, and Written Language.

Kendrick's (13) study of the Experience Approach to the teaching of language arts, when compared with what he called Traditional Method of Instruction, was inconclusive. He performed an extensive analysis of the data,most of which indicated that there were few significant differences between the Experience Approach and Traditional Methods groups.

Allen (27) had conducted an exhaustive study in San Diego, California a few years earlier, and reported no differences among three approaches - Language Experience, Individualized Reading, and Basic Reading. He found that children in all groups performed equally well when the programs used were taught effectively.

Strickland (22) studied the adequacy of basal reader materials by comparing the oral language patterns of 575 elementary school children with the language patterns found in basic readers. She learned that young people's oral language patterns are much more varied than the language patterns found in basic readers. At the early primary level, basic reading materials were quite simple, and failed to capitalize on the language experiences of most boys and girls.

Although current research in beginning reading instruction was not conclusive, it would seem that the concept of consistently integrating the language arts and making adequate provisions for effective word recognition training in the early stages of reading instruction had been strengthened. The question of curriculum in development of communication skills could be more effectively achieved through the use of a simplified alphabet, as Downing concluded, certainly merited further research.

CHAPTER III

PROCEDURES

BACKGROUND

This study orginated in the offices of Oakland Schools, the Intermediate School District of Oakland County, in the fall of 1964. It was moved to Oakland University in the fall semester of 1965 when the director of the project was appointed to the staff of the School of Education. Despite the change of location, the original design of the research program was maintained. As in the previous year, effective relationships were continued with the research schools.

Originally, twelve research teams were organized to study the effects of three approaches to beginning reading instruction. One research team was assigned to a school district. It was planned that each team would consist of three classrooms, one for each approach, and that the children within these teams would represent as closely as practical similar socio-economic levels. All districts except one, Clarenceville, agreed to locate the experimental classrooms in separate schools. Clarenceville, a small district, provided one school for three approaches. Two districts, Madison Heights and Hazel Park, worked together to organize one team. Thus, all the research teams made provisions for instruction in each of the three approaches.

At the start of the second grade project, Birmingham School District felt that it was necessary to drop out of the experiment because of the need to redistribute certain school populations. The school districts involved in this experiment were: Bloomfield Hills, Clarenceville, Farmington, Hazel Park - Madison Heights, Oak Park, Pontiac, Royal Oak, Troy, Walled Lake, Waterford, Lamphere. All of the elementary schools in this study were located in Oakland County, a populated suburban area in southeastern Michigan close to Detroit. The geographical problems associated with this study made supervision and direction difficult. Some of the schools were thirty or more miles apart. Maintaining contacts with 33 teachers in 31 schools was a source of concern and, at times, frustration for the project staff.

TEACHERS

In the first grade study, the teachers involved in each of the three approaches were volunteers. They were required to have at least one year of teaching experinece, and were selected for the program on the basis of superior performance the year before. At the second and third grades, less selective procedures had to be employed as the project was limited to those teachers within the schools committed to the program. The principals in each school selected a qualified teacher to continue with the experiment. Whenever practical, volunteers were chosen.

ITA workshops had been conducted extensively by Mr. Philip Hilaire of the Oakland County Schools office throughout the previous year. Thus, most of the teachers were acquainted with the new alphabet and, fortunately, some of the ITA teachers had received instruction the previous year. In a few instances, too, the language experience teachers had previous workshop experience in individualized reading instruction and language experience. It is important to note, however, that ITAA and LEA teachers were not experienced with the approaches they were invited to use during their year in this experiment. In contrast, the BRA teachers were able to use basal programs with which they had considerable experience.

The following chart reveals the age, experience of the teacher, and the number of teacher-pupil day absences in each of the three approaches.

TABLE 1

TEACHER-PUPIL DATA -- SECOND AND THIRD GRADES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
Age of Teacher	32.00	43.87	32.54	32.76	32.00	32.74
Years of Experience of Teacher	7.54	8.49	10.51	5.08	5.63	6.17
Days Absent - Pupil	9.82	8.16	10.05	6.58	9.05	7.88
Days Absent - Teacher	5.03	3.75	5.11	5.98	6.75	5.43

A study of the educational background of all the research teachers indicated that each one had received a bachelor's degree, and that most had taken work in a master's degree program. At the second grade level, the mean age of 32 applied to teachers in all three groups. The average third grade teacher in ITAA was ten years older than the average teacher in LEA or BRA. The LEA teachers at the second grade level appeared to have more teaching experience. This applied to ITAA teachers at the third grade level. Teachers and pupil absences did not vary too greatly although there appeared to be more pupil absences in second grade. It is interesting to note that the older ITAA teachers had better attendance records.

Early in second and third grades, we administered the Teacher Inventory of Approaches to Teaching of Reading prepared by the San Diego County School District. The results are shown on Tables 2 and 3. The LEA teacher participants appeared more committed to individualized and language experience instruction than teachers in the other two groups. ITAA teachers showed a preference for individualized reading and language experience whereas BRA teachers made comparable scores on all three approaches. It would seem that LEA and ITAA teachers were chosen because of their concern for the research methodologies or possibly because of their dissatisfaction with basal reader practices.

Throughout the in-service programs scheduled during September, October and November, the research teachers at the second and third grade levels participated with interest and concern for the materials and practices being used. Interaction among them, however, was somewhat limited and a feeling of insecurity pervaded those involved in the experimental programs. Attention had to be focused on mechanics of organizing classrooms and procedures for keeping track of individual progress. Human resources such as Peggy Brogan, educational consultant for Holt, Rinehart, & Winston, Inc.; R. Van Allen, University of Arizona; William Martin, author; Helen Murphy, Boston University; Alvina Burrows, New York University; and Walter Loban, University of California, assisted in the workshops and gave the teachers considerable understanding for various aspects of the program. It wasn't until January or February that teachers readily shared their instructional practices with the desired enthusiasm and high regard for one another's activities. It was exciting to note the gradual development of momentum

TABLE 2

TEACHER ATTITUDE INVENTORY OF APPROACHES TO THE TEACHING OF READING - - SECOND GRADE

	ITAA			LEA			BRA		
	a	b	c	a	b	c	a	b	c
Research Team #2	42	45	35	35	46	55	45	40	30
Research Team #3	38	40	37	27	49	42	31	50	47
Research Team #4	31	43	42	18	45	52	27	52	54
Research Team #5	37	49	40	19	54	54	43	37	41
Research Team #6	29	38	41	25	42	45	53	30	22
Research Team #7	39	52	51				42	39	38
Research Team #8				35	44	52	45	36	36
Research Team #9	40	28	29	36	44	46	40	36	34
Research Team #10	29	42	47	30	49	39			
Research Team #11	35	42	44	16	51	51	40	45	48
Research Team #12	42	40	38						
TOTALS	362	419	404	241	424	436	366	365	350
MEANS	36	42	40	27	47	48	41	41	39

a. Basic
b. Individualized
c. Language Experience

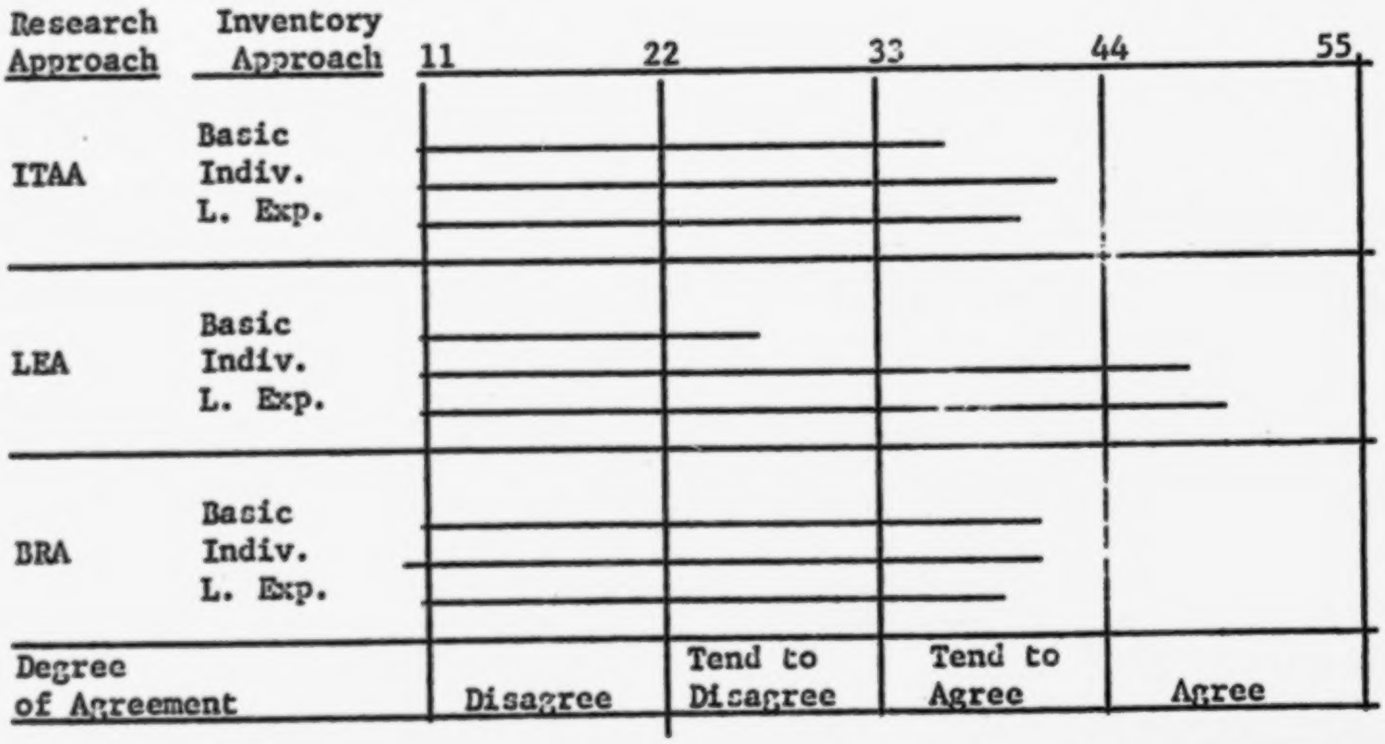
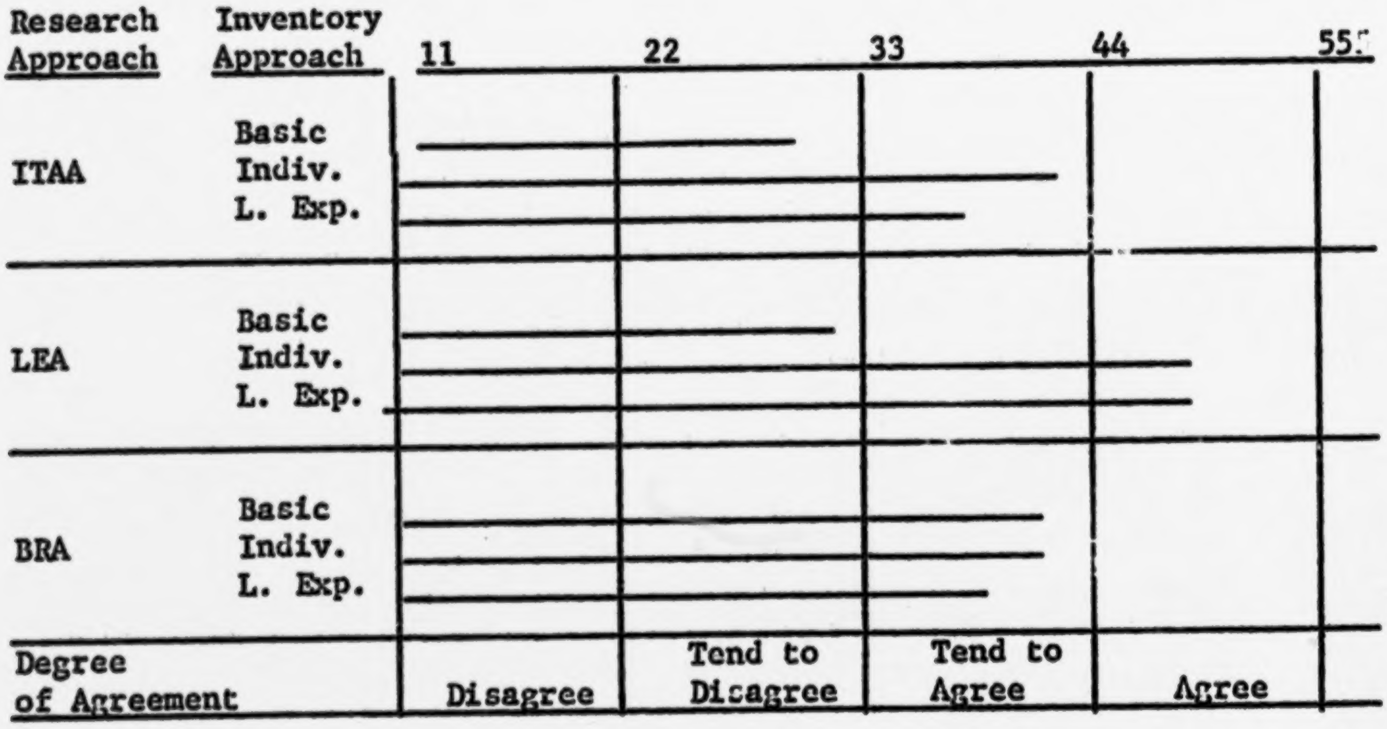


TABLE 3

TEACHER ATTITUDE INVENTORY OF APPROACHES TO THE TEACHING OF READING - - THIRD GRADE

	ITAA			LEA			BRA		
	a	b	c	a	b	c	a	b	c
Research Team #2	19	45	36	32	47	45	49	34	36
Research Team #3	50	42	36	34	45	43	48	29	32
Research Team #4	2	3	4	22	51	45	25	39	32
Research Team #5	43	45	48	39	47	48	42	44	37
Research Team #6	27	49	48	32	42	35	34	46	47
Research Team #7	32	52	50	18	45	54	45	31	21
Research Team #8				26	47	45	38	47	43
Research Team #9	24	47	46	21	48	53	34	42	36
Research Team #10	28	42	42	27	47	48			
Research Team #11	27	44	30	41	50	52	32	39	36
Research Team #12	23	55	25				43	43	36
TOTALS	275	424	365	292	469	468	390	394	356
MEANS	28	42	37	39	47	47	39	39	36

a. Basic
b. Individualized
c. Language Experience



which resulted. It was gratifying to listen to the teachers discuss the assets of the methodology they employed. The frequent in-service meetings, two each month, were well accepted and may have been the most valuable part of this program. These meetings served to promote considerable teacher interest among the associated schools of the districts involved in the study.

The research staff noted the lively involvement of the second grade LEA and ITAA teachers and attributed this to the fact that wo of the first grade teachers in each approach who had assumed a leadership role continued with the project through second grade. At the third grade level, the BRA teachers were most active in their concern for improving writing skills and in encouraging independent reading.

STUDENTS

Table 4 served to reveal the population distribution in the three approaches at second grade level and, once more, third grade level. One reason for the sharp decrease in pupils at third grade may be attributed to the fact that one BRA teacher chose not to participate. Changes in population from second to third grade level must be attributed to the high rate of mobility of families in this area. The variation in girl-boy population among the three approaches deserves attention.

TABLE 4

PUPIL POPULATION -- SECOND AND THIRD GRADES

	Second Grade			Third Grade		
Students	ITAA	LEA	BRA	ITAA	LEA	BRA
Boys	112	95	109	89	81	73
Girls	88	108	99	89	94	74
Totals	200	203	208	178	175	147

PLAN OF RESEARCH

A. General Design of Study

1. Outline of Specific Practices

a. Two three-day preschool conferences were scheduled for teachers and supervisors involved in the project. The first was held in September, 1965, for second grade teachers and the second in 1966 for third grade teachers.

b. Bi-weekly meetings with teachers and staff were scheduled for September, October, and November to assure familiarity with the objectives, purposes and methodology of this study. Monthly meetings followed for the remainder of the school year.

c. The number of conferences, supervision and consultant services for research teachers was equal for all three approaches.

d. Preliminary testing late in September or early October used the following measures to ascertain changes, if any, in the general abilities and reading skills of children in all three approaches:

(1) Kuhlman-Anderson Intelligence Test, Form A, (second grade only).

(2) Gates Primary Reading Test at second grade.

e. Each teacher maintained personal files of the stories and books read by students in this study. Students were asked to react to materials read by completing one of a number of reaction forms provided in each classroom for this purpose. These included check sheets, such as: "I read this story because (followed by a list of reasons including "I don't know."):

"I did not finish this book because ______________:" "This story was (good, fair, poor, awful): "I liked this book because ______________." Brief responses were recorded. The data provided a list and revealed the general nature of the books read by each student. The reports were intended to give some insight as to the quality of responses to the material read.

f. Taped samplings of the oral responses of selected young people, together with their written compositions, were studied on two occasions during the first semester and two during the spring semester of each school year. Three young people representing the high, average and low achievement groups were selected randomly for these samplings. The samplings were made by the project staff which established purposes for oral and written responses to assure the same opportunity in terms of practice effect and preparation.

g. Instead of a "Sample Composition Test," which did not develop satisfactorily, the staff substituted the Kellogg Hunt Indices (12) for Linguistic Maturation and the Paul Torrance Test for Thinking Creatively With Words, Verbal Form A. (26) The change was reported. The Hunt Indices were used on the second and third grade materials, while the Torrance Test was given to a representative sample of third grade children. The data for these two tests were studied according to approach used, and t-tests were applied to determine significance.

h. Final pupil evaluations were made late in May of 1966 and 1967. The following standardized tests were used for this purpose:

(1) Stanford Achievement Test, Primary II Battery, Form X in second grade and Primary II Battery, Form W in third grade.

(2) Gilmore Oral Reading Test (Form B in 1966 and Form A in 1967)

(3) Gates Word List

B. Descriptions of Approaches

1. Language Experience Approach

a. The LEA stressed the importance of the child knowing his own language in order to communicate effectively. The teacher, therefore, provided each young person with daily opportunities to:

(1) Extend his experience with words through sharing and discussing, listening to and telling stories, dictating ideas, writing independently and making his own books.

(2) Study the English language by expanding his vocabulary, developing awareness of common words, and helping him to see the relationship of speaking, writing and reading.

(3) Relate the ideas of authors to personal experience by using a variety of resources, stressing comprehension skills in reading, and organizing thoughts and information.

b. This study used as a guide for direction and differentiation of instruction the twenty language experiences identified by R. Van Allen (27) in the San Diego, California, Language Experience Study.

c. Broad topics taken from studies in science, social studies, literature, the English language and related areas provided the base, enlarging opportunities for children with each of the twenty language experiences. Language Experiences in Reading prepared by R. Van Allen (1), published by the Encyclopedia Britannica Press, were employed.

d. Reading instruction was provided in the second and third grades of this study through individual and group activities.

(1) Individualized reading stressed self-selection and self-pacing upon the part of each student. Individual pupil-teacher conferences were scheduled by the teacher to study progress and assist when necessary.

(2) Group directed reading instruction was provided to help each child develop a reading-study plan. It was believed this could be best fostered in a situation which provided sharing of group experience, declaration of purposes for reading, selection of appropriate answers evaluated by the group, and the extension of specific comprehension skills necessary to maturity in effective thinking. Grouping practices were employed in terms of instructional needs. No one textbook was selected for group instruction as trade books were also used for this purpose.

(3) To provide adequate teacher time for effective group directed reading instruction as well as individualized reading instruction, alternate months were devoted to planned directed reading in materials selected by the

students and teachers. The remaining months wer devoted to individual conferences with students in materials of their own selection. This did not preclude small group meetings designated by the teacher to deal with problems in comprehension and word attack as they are identified in her work with boys and girls.

f. Formalized instruction in the development of word attack skills was initiated in first grade with the use of FROM SPEECH TO PRINT prepared by Donald Durrell and Helen Murphy. Use of these materials continued where necessary. It was anticipated, however, that instruction in word attack would be dictated by students needs in reading and writing situations.

g. The Botel Multi-Level Speller (3) was used in second and third grades to encourage individualized spelling instruction. Each young person maintained a word file system.

2. The Initial Teaching Alphabet Approach

a. A majority of the young people who were instructed in the use of ITA in first grade transferred to traditional print before the close of their first school year. It was anticipated that these children would respond best to the Language Experience Approach described above. Thus, the LEA and ITAA followed a similar instructional pattern.

(1) Review of phonic generalizations appropriate to word attack skills necessary in traditional orthography was developed inductively as the need arose.

(2) Attention to the spelling in traditional print followed one of a number of plans depending on the needs

of students.

(a) Early writing of young people in ITA was typewritten in traditional orthography so that models for correct spelling were available to the student.

(b) Words which are common to TO and ITA were identified as they appeared in frequent writing.

(c) Common words which followed a particular pattern in TO were identified and studied inductively to note differences with ITA words.

(d) A collection of frequently misspelled words was made by individual students for careful study and practice.

(e) Common word lists were studied to identify those which caused problems in writing in TO.

(f) Various forms of proof reading with fellow students as well as the teacher were practiced to develop a sensitivity to the new practices in spelling.

b. Young people who had not made the transition to traditional orthography continued to receive instruction in ITA making use of the Downing Readers and available trade books as well as extensive opportunities for writing provided in the thematic units of the language-experience approach to reading. When this group mastered the simplified vocabulary, self-selection of the appropriate materials to be used for instruction in TO was applied. The alternate month's pattern for instruction noted in the first approach was applied here.

3. The Basic Language Arts Approach

a. No one particular basic series for reading, writing, or spelling was identified for this study as each of the twelve school districts involved selected texts according to the dictates of their curriculum committees. The reading series were limited to these publishers: Houghton, Mifflin Co.; Scott, Foresman Co.; American Book Company; Allyn and Bacon Co. The teachers' manuals of the various basal materials provided the curriculum guides or the framework for the program which was used.

b. The BRA teachers were directed to make a classroom analysis of the language needs of each pupil in order to assure effective mastery of the material. Once the instructional level of the student was ascertained, skills for assisting him in making progress were introduced by the author of the materials through teachers' guides, directed reading lessons, workbooks and opportunity for related independent reading and writing.

c. The rate of development and use of specific skills in comprehension, word attack, composition, speaking and spelling were essentially dictated by the authors of the basic materials.

d. Opportunities for extensive reading beyond the basal materials were encouraged. However, it was anticipated that this part of the curriculum reinforced the basal program and was not necessarily used to develop new skills or for personalized instructional practice as employed in LEA or ITAA.

C. Supervision

1. Supervision of the research teachers was the responsibility of the local school district administration. It was important that the principal, helping teachers and elementary program directors be familiar with the goals and objectives of this project. Administrators were, therefore, invited to participate in all conferences and programs related to this study.

2. The chief investigator and his small staff served as consultants and assisted in the collection of information needed in the program. This staff was available for conferences with individual teachers as the need arose. However, close daily contact was impossible because of the distances between the many schools involved in the study.

3. It was felt that the opportunity for research teachers to meet frequently to share promising practices in the approach they were using provided a valuable assist in establishing useful guidelines and was a source of stimulation to the project.

4. Nationally know consultants were employed when needed to provide specific assistance on important problems identified in the development of this research.

D. Collection of Data

1. Standardized Tests

In late September and early October of second grade, the three treatment groups were administered the Kuhlmann-Anderson Test, Form B, and the Gates Primary Reading Test, Form I, Word Recognition and Paragraph Reading. These are group tests which were administered by the teachers in the project and scored by the administrative staff.

At the close of second grade and third grade, the research teachers were instructed as to the procedures for administering the Stanford Achievement Test, Primary Battery II, which included all the sub-tests in the battery: Word Meaning, Paragraph Meaning, Science and Social Studies Concepts, Spelling, Word Study Skills, Language, Arithmetic Computation and Arithmetic Concepts. The completed tests were forwarded to the research center staff for scoring. Second grade pupils were also given the Reading Attitude Inventory prepared by San Diego County, California. This test was not used again in the third grade as it was felt that pupil exposure to this device had been sufficient.

A random sample of six students from each of the research classrooms was selected for the purpose of administering the Gilmore Oral Reading Paragraph, Form A and/or B, and the Gates Word Recognition Test. These tests were administered individually by local district coordinators or members of the research staff at the close of second and third grades.

In the study of the children with high as well as low intelligence test scores the Pintner-Cunningham results were used. Thirty-five young people at each of the two extremes of the continuum were identified and their results on the achievement test battery studied to determine which of the three approaches served the academic needs of pupils most effectively.

A study of word attack skills was made through the use of the

Gates Word Recognition Test and two sub-tests of the Stanford Achievement Battery. Skills in word attack were also revealed on the studies of spelling in the writing samples submitted by the boys and girls.

The achievement of boys versus girls in each of the three approaches was studied through the use of the Stanford Achievement Battery as well as with data collected on the oral and written language surveys. The data was placed on tables in an effort to differentiate achievement patterns among the three approaches.

2. Reading Records

Each young person in the study was asked to maintain a complete list or card file of all the trade books read throughout the second and third grades. The titles of books read were submitted to the research center periodically for analysis. The titles were studied in an attempt to discover the nature of selections made by various young people in each approach. The number of books was recorded on tables to discover whether or not significant differences were evident among the three groups. It was recognized that this part of the study was highly subjective. It seemed that after a few attempts to collect information of books read by young children, they were apt to become highly competitive. In a few classrooms the number of books read seemed to soar far above reality.

In the second grade, the month of February was set aside to make a very careful study of the number of books read. These results were recorded. At the third grade level, when students were accustomed to record keeping, the complete eight month survey was carefully prepared.

3. Oral and Written Composition

Vocabulary studies were made with standardized test instruments as well as with oral and written samples of a representative group of children chosen in the study. Writing samples were collected twice during the fall term and twice during the spring term in both grade levels. Oral samples were collected at similar times. The nature of children's writing varied considerably from one period to the next. The stimulus or topic was one of the determining factors. Two minute taped recordings were made of children's oral language from a representative group. In some instances they discussed experiences they had during the previous week. And in others, they listened to a story or poem and elaborated upon the material as part of the oral exercise. Most of the oral sample were made in the classroom. It was felt that frequent questions were needed to encourage children to talk. This part of the experiment was quite difficult to develop.

The oral and written samples were examined through the use of the Mechanics Ratio Scale, a device prepared by participants in the first grade study. This scale served to focus attention on the number of running words, the number of different words, the number of polysyllabic words, and the number of words spelled correctly in writing. It also provided a mechanics ratio score which made provisions for punctuation and grammatical structure.

The oral sample permitted a similar study of the number of running words, different words, and polysyllabic words employed.

Kellogg Hunt's Indices for an examination of linguistic maturation was applied to the written as well as the oral samples. Particular concern was demonstrated for the clause length, the sub clause length, the t-unit length, the main clause coordination and the sentence length. It is apparent that the inflection of the voice had to be a key factor in studying the oral data.

4. Creative Thinking

The test of creative thinking used in this study was Thinking Creatively With Words, Verbal Form A. It consisted of the following seven activities all of which were timed:

Ask-and Guess

> This part of the test is made up of three activities; asking, guessing causes, and guessing consequences. The subject is shown a picture and is then instructed to ask questions about the picture to find out what is happening, guess causes for the action in the picture, and guess consequences that might result from the activity in the picture. These three activities are administered separately.

Product Improvement

> The subject is shown a stuffed elephant and is told to list the cleverest, most interesting and unusual ways in which the toy elephant can be changed so that it will be more fun to play with.

Unusual Uses

> The subject is asked to list as many interesting and unusual uses that he can for cardboard boxes. He is told not to limit himself to any one size box.

Unusual Questions

> In this activity the subject is told to think of as many questions as he can about cardboard boxes .

> This leads to a variety of questions which might arouse others interest and curiosity in ways boxes might to be used.

Just Suppose

> The subject is given an improbable situation -- 'just suppose clouds had strings attached to them which hang down to earth'. He is then instructed to describe what would happen.

All seven activities were scored for fluency, flexibility, and originality with the exception of Unusual Questions which was scored only for fluency and originality. The scores were then totaled using the manual which accompanies the test. Torrance defined each area of creativity tested as follows:

Fluency - This score reflects the test taker's ability to produce a large number of ideas with words.

Flexibility - This score represents subject's ability to produce a variety of kinds of ideas, to shift from one approach to another, or to use a variety of strategies.

Originality - This score represents the subject's ability to produce ideas that are away from the obvious, commonplace, banal, or established.

The three children in each class who had been selected for the study were taken from their regular classroom to another room in the school and were administered the Torrance test, Thinking Creatively With Words, by either the staff from Oakland University, Rochester, Michigan, or by the reading consultant of the school district. All the people who administered the test were known by the children before this testing.

Because it was anticipated that third-grade children might have difficulty writing as quickly as they thought, or might have difficulty with the mechanics of writing, each child was provided with a student-recorder from the sixth grade at the school. The student-recorder had been preinstructed to write as quickly as possible, spell phonetically when necessary, use abbreviations, and lend encouragement with a smile, but offer no assistance or answers.

The three third-grade children were seated at separate tables facing the student-recorders, and with their backs to each other.

The directions for the test were given to the three children at the same time following the procedure described in the manual which accompanies the test. During the Product Improvement activity, the stuffed elephant which accompanies the testing material was moved from table to table in order for the child to examine and manipulate it if he wished.

The tests were given at all times throughout the regular school day during the last weeks in May and the first week in June.

The tests were scored in accordance with the manual for fluency, flexibility, and originality as previously defined. Because of the nature of the test, it was sometimes necessary for the scorer to make judgments concerning the appropriateness of response, and the originality of some responses. However, the manual was followed closely, and a record was kept of judgments made to insure consistent scoring of all tests.

The scores of all the tests were grouped according to the type of reading approach by which the child had been taught; then were regrouped according to the sex of the child regardless of the reading approach. This was done to test the hypothesis that there would be no difference, significant at the .05 level, in the creativity scores of the children in any of the three approaches to teaching reading as tested by Thinking Creatively With Words, and to discover if there would be a significant difference between the scores of boys and girls regardless of the reading approach.

5. Curriculum Adjustments

A record was maintained of the curriculum adjustments and problems encountered by teachers and administrators throughout the project. Teachers were asked to evaluate their programs in considerable detail at the close of each of the two school years.

The Project Evaluation Scale (See Appendix A) was used to collect additional information from the elementary school administration staff. The forms were forwarded to each principal for consideration. The information, however, was collected through a personal interview.

CHAPTER IV

DATA ANALYSIS

Information gathered in this study was placed on IBM cards and forwarded to the Computer Center of Oakland University for analysis. The means and standard diviations were computed and a t test was employed to determine the significance of differences which were requested in comparing the performance of the young people among the three approaches at the close of the second grade and again at the third grade levels. A determined effort was made to insure uniformity in the supervision, administration and the scoring of the devices used in this study. Only the data on those students who had participated in the first grade study were considered in this report.

The tables summarizing the information collected were presented sequentially in accord with questions which were raised in Chapter I. Whenever practical the second and third grade results were treated together to reveal changes in learning behavior and to provide clues as to significant achievement patterns. Significance was reported at the .05 and .01 levels. Information which might reveal causal factors for differences in test results are included in the report. More detailed test data summarized for each of the eleven research teams were included in the Appendix.

1. Will there be a significant difference in the effectiveness of the three approaches to reading and related language skill development when standardized measuring devices are employed at the close of second and third grades?

TABLE 5

SUMMARY OF RESULTS OF STANFORD ACHIEVEMENT BATTERY II
Second Grade, May 1967

	ITAA/N=221		LEA/N=212		BRA/N=216		t TESTS		
TESTS	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA/LEA	ITAA/BRA	LEA/BRA
Word Meaning	20.19	7.65	21.29	7.09	19.42	6.47	-1.54	1.13	2.84**
Paragraph Meaning	32.53	13.01	34.10	11.32	30.99	10.85	-1.33	1.33	2.89**
Science-S. S. Concepts	19.96	5.71	20.75	5.08	19.31	5.58	-1.51	1.20	2.78**
Spelling	15.68	8.02	15.90	7.91	14.09	7.60	-0.28	2.12*	2.40*
Word Study	40.78	12.74	40.40	11.34	38.09	12.12	0.32	2.25*	2.03*
Language	38.06	10.59	39.69	9.16	37.58	10.25	-1.70	0.48	2.23*
Arithmetic Computation	20.97	9.05	21.78	7.66	21.73	8.63	-1.00	-0.89	0.06
Arithmetic Concepts	20.74	9.44	21.34	7.83	20.33	8.83	-0.71	0.46	1.24
PINTNER-CUNNINGHAM - 1964	40.19	8.70	41.04	6.94	39.75	7.76	-1.11	0.55	1.80

* - Significant at .05 level
** - Significant at .01 level

TABLE 6

SUMMARY OF RESULTS OF STANFORD ACHIEVEMENT BATTERY II
Third Grade, May 1967

TESTS	ITAA/N=178		LEA/N=177		BRA/N=152		t TESTS		
	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA/LEA	ITAA/BRA	LEA/BRA
Word Meaning	25.50	6.32	26.07	5.65	25.16	8.36	-0.90	0.42	1.18
Paragraph Meaning	41.85	11.76	42.20	10.25	39.71	11.11	-0.30	1.68	2.10*
Science-S. S. Concepts	24.08	6.22	24.70	6.05	24.33	5.71	-0.95	-0.38	0.57
Spelling	20.72	7.56	21.61	6.63	18.90	7.88	-1.17	2.13*	3.38**
Word Study	46.57	13.19	44.06	11.90	41.66	13.84	1.88	3.28**	1.69
Language	47.09	12.59	47.47	10.13	45.74	11.65	-0.31	1.00	1.43
Arithmetic Computation	34.59	10.51	34.55	10.36	31.03	11.45	0.04	2.92**	2.90**
Arithmetic Concepts	29.68	10.04	29.78	29.78	8.24	27.30	-0.10	2.14*	2.46*
PINTNER-CUNNINGHAM - 1964	40.06	8.70	41.12	6.86	39.82	7.73	-1.35	0.30	1.79

* - Significant at .05 level
** - Significant at .01 level

TABLE 7

SUMMARY OF RESULTS FOR THE GILMORE ORAL READING PARAGRAPHS AND THE GATES WORD LIST, SECOND GRADE

	ITAA/N=62		LEA/N=65		BRA/N=49		t TESTS		
GILMORE ORAL READING PARAGRAPHS	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA-LEA	ITAA-BRA	LEA-BRA
Accuracy	37.89	18.58	39.50	15.99	36.67	13.57	-0.91	0.69	1.78
Rate (wpm)	87.3	34.3	90.0	35.6	93.8	31.1	-0.75	-1.84	-1.06
GATES WORD LIST Word Pronunciation	26.38	8.80	26.12	8.35	23.58	6.73	0.29	3.29**	3.12**

SUMMARY OF RESULTS FOR THE GILMORE ORAL READING PARAGRAPHS AND THE GATES WORD LIST, THIRD GRADE

	ITAA/N=39		LEA/N=37		BRA/N=31		t TESTS		
GILMORE ORAL READING PARAGRAPHS	Mean	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA-LEA	ITAA-BRA	LEA-BRA
Accuracy	49.33	22.58	47.05	22.34	49.48	22.89	0.44	-0.03	-0.44
Rate (wpm)	113.36	34.52	117.59	36.97	122.84	29.67	-0.51	-1.19	-0.63
GATES WORD LIST Word Pronunciation	32.46	6.63	33.00	6.16	31.94	6.52	-0.36	0.33	0.68

** - Significant at .01 level

The summaries of the data collected from large and small group test results were reported in Tables 5, 6, and 7. Signficant differences were found at the second and third grade levels. It was apparent, however, that consistant differences over the two year experimental period were not extensive.

ITAA versus LEA

On the Stanford Achievement Battery, no significant differences were found at the second or third grade levels. Spelling differences noted at grade one had disappeared. It seemed that ITAA children were able to transfer satisfactorily to traditional orthography without undue difficulty. The latter was accomplished through intensive word analysis training in second grade. That training undoubtedly contributed to the high Word Study score noted in the ITAA group at the close of grade three.

No significant differences were noted on the Gilmore Oral Reading Paragraphs or Gates Word List. The advantage of using ITA over TO for beginning reading instruction was not demonstrated on these standardized tests.

ITAA versus BRA

On the Stanford Achievement Battery at the second grade level, ITAA children made higher scores in Spelling and Word Study, significant at the .05 level. These differences were consistent at the third grade level and Word Study moved up to the .01 level of significance. Other differences in reading were also found buy they were not significant. ITAA excelled in Arithmetic Computation and Arithmetic Concepts by the close of the third year.

No differences were noted on the Gilmore Oral Reading Paragraphs. However, ITAA scores were significantly higher than BRA on the Gates Word List at the close of second grade but not at third grade. The latter could be attributed to the limited number of words used or to a closing in the gap between ITAA and BRA after three years.

LEA versus BRA

On the Stanford Achievement Battery, LEA pupils at the second grade level performed significantly higher than BRA in Word Meaning, Paragraph Meaning, Science and Social Studies Concepts, Spelling, Word Study and Language. The first three tests were highly significant at the .01 level.

As with the ITAA group, LEA children excelled in the Gates Word List at second grade but no signficant differences were reported on the Gilmore Oral Reading Paragraphs at the second or third grade levels.

2. Which of the three approaches would best serve the reading and language development of children with high and/or low intelligence scores?

Test data on the thirty-five children with the highest Pintner-Cunningham scores for each approach were summarized on Table 8. Except for Paragraph Meaning in which ITAA and LEA excelled BRA at the .05 level of significance, differences at the second grade level were not extensive. LEA pupils, however, read far more books than ITA and BRA children in the one month period selected for careful study.

At the close of third grade, the ITAA pupils made significantly better scores than LEA in Word Study and Language and with BRA in Language. No significant differences were noted in the number of books read

TABLE 8

SUMMARY OF TEST DATA
FOR PUPILS WITH HIGH P. C. SCORES

SECOND GRADE

	ITAA N=35		LEA N=35		BRA N=35		ITAA/LEA	ITAA/BRA	LEA/BRA
Tests	Mean	S.D.	Mean	S.D.	Mean	S.D.			
STANFORD ACHIEVEMENT									
Word Meaning	26.70	4.78	27.74	5.81	24.29	6.36	-0.81	1.77	2.34 *
Paragraph Meaning	44.48	7.96	43.77	8.26	37.51	11.11	0.36	2.97 *	2.64 *
Sci. & Soc. Stud.	24.69	5.65	23.77	5.23	23.37	5.12	0.70	1.01	0.32
Spelling	20.60	6.37	22.20	8.00	18.86	8.18	-0.91	0.98	1.70
Word Study	49.83	9.80	49.91	6.89	45.86	11.27	-0.04	1.55	1.79
Language	46.66	8.92	47.54	6.72	43.29	12.67	-0.46	1.27	1.73
PINTNER-CUNNINGHAM	50.77	2.40	50.34	30.31	49.63	2.10	0.80	2.08 *	1.42
NUMBER OF BOOKS READ (one month)	10.40	9.91	24.03	17.12	9.95	6.58	-3.70 **	0.17	4.11 **

THIRD GRADE

	ITAA N=30		LEA N=30		BRA N=23		ITAA/LEA	ITAA/BRA	LEA/BRA
Tests	Mean	S.D.	Mean	S.D.	Mean	S.D.			
STANFORD ACHIEVEMENT									
Word Meaning	31.10	2.40	29.53	4.36	29.91	5.56	1.70	0.94	-0.26
Paragraph Meaning	52.10	5.20	49.63	5.86	48.17	6.57	0.25	0.40	0.82
Sci. & Soc. Stud.	29.33	3.31	28.37	4.88	28.17	5.47	0.88	0.88	0.14
Spelling	26.43	4.45	25.33	3.54	23.96	5.28	1.04	1.77	1.05
Word Study	57.47	6.29	52.07	9.14	55.70	5.93	2.65 *	1.03	-1.72
Language	60.67	8.62	54.76	7.03	55.17	9.77	2.86 **	2.09 *	-0.17
PINTNER-CUNNINGHAM	51.46	2.20	50.34	2.01	50.15	1.87	2.19 *	2.63 *	0.40
NUMBER OF BOOKS READ (nine months)	118.09	140.65	92.42	61.99	69.53	51.20	0.92	1.73	1.37

* Significant at .05 Level ** Significant at .01 Level

TABLE 9

SUMMARY OF TEST DATA
FOR PUPILS WITH LOW P. C. SCORES

SECOND GRADE

	ITAA N=3		LEA N=35		BRA N=35				
TESTS	Mean	S.D.	Mean	S.D.	Mean	S.D.	ITAA/LEA	ITAA/BRA	LEA/BRA
STANFORD ACHIEVEMENT									
Word Meaning	14.74	7.12	15.47	6.26	16.26	4.80	-0.45	-1.02	-0.58
Paragraph Meaning	19.61	11.38	23.57	10.12	24.23	10.28	-1.50	-1.73	-0.26
Sci. & Soc. Stud.	15.18	4.23	17.66	5.05	16.23	4.39	-2.18 *	-0.99	1.24
Spelling	10.74	7.01	10.40	5.54	10.41	6.96	0.22	-0.19	0.00
Word Study	29.24	8.54	31.09	7.82	29.50	9.67	-0.92	-0.12	0.75
Language	30.50	8.02	33.86	6.38	30.20	7.84	-1.89	0.15	2.09 *
PINTNER-CUNNINGHAM	25.23	6.08	30.31	3.42	26.66	4.74	-4.25 **	-1.08	3.64 **
NUMBER OF BOOKS READ (one month)	6.33	3.50	11.47	9.51	4.27	3.66	-2.75 *	2.15 *	3.78 **

THIRD GRADE

	ITAA N=27		LEA N=31		BRA N=25				
TESTS	Mean	S.D.	Mean	S.D.	Mean	S.D.	ITAA/LEA	ITAA/BRA	LEA/BRA
STANFORD ACHIEVEMENT									
Word Meaning	19.37	6.27	21.87	5.46	22.04	10.58	-1.58	-1.07	-0.07
Paragraph Meaning	28.89	11.64	33.93	10.45	30.38	11.30	-1.69	-0.46	1.19
Sci. & Soc. Stud.	17.85	5.17	19.94	5.60	19.24	3.92	-1.45	-1.11	0.54
Spelling	14.93	6.68	16.84	6.34	14.52	8.55	-1.09	0.19	1.11
Word Study	34.89	12.00	35.97	9.99	29.96	11.98	-0.36	1.45	1.97
Language	36.15	8.51	40.77	6.90	35.32	9.64	-1.10	0.32	2.33 *
PINTNER-CUNNINGHAM	25.23	6.08	30.49	2.52	26.23	4.49	-4.66 **	-0.77	4.82**
NUMBER OF BOOKS READ (nine months)	60.71	41.30	81.84	67.74	59.52	52.62	-1.45	0.08	1.32

* Significant at .05 Level

** Significant at .01 Level

over a nine month period. Bright ITAA children at the close of the third grade made higher scores in all of the achievement battery sub tests. Higher intelligence scores may have been a partial factor. These results seemed to concur with those reported by Downing who found that highly intelligent children profited most from the use of ITA.

Table 9 summarized the test data for the thirty-five pupils in each approach with the lowest Pintner-Cunningham scores. In this part of the study, LEA pupils had the highest intelligence scores. At the second grade level differences among the achievement battery tests results were negligible. LEA pupils, however, read more books than ITAA or BRA.

Negligible differences among the three approaches were also reported the third grade level. However, LEA and ITAA pupils seemed to produce somewhat higher Word Study and Language skills when compared with BRA. Which approach to use for children with low intelligence scores was not conclusively revealed in this study.

3. How did pupils in each of the three treatment groups perform on the Gates Primary Reading Test and the Kuhlman-Anderson Intelligence Test, Form A, early in second grade?

The summary of the Kuhlman-Anderson Test results on Table 10 revealed similar scores between ITAA and BRA. LEA pupils, however, made significantly higher scores at the .01 level. The data could indicate that the LEA group consisted of students with higher intellectual capacity or that the LEA group was more at ease in taking this test. When this test was given many ITAA children had not fully transferred

TABLE 10

SUMMARY OF RESULTS
FOR THE KUHLMAN-ANDERSON TEST

SECOND GRADE

	ITAA		LEA		BRA		ITAA/LEA	ITAA/BRA	LEA/BRA
TEST	Mean	S.D.	Mean	S.D.	Mean	S.D.			
Raw Scores	48.65	13.81	53.24	11.60	48.68	11.06	-3.52 **	-0.02	3.78 **

TABLE 11

SUMMARY OF RESULTS
GATES PRIMARY READING

SECOND GRADE

	ITAA		LEA		BRA		ITAA/LEA	ITAA/LEA	LEA/BRA
GATES TESTS	Mean	S.D.	Mean	S.D.	Mean	S.D.			
Word Recognition	38.09	12.66	42.41	8.15	38.45	9.09	-3.98 **	-0.30	4.34 **
Paragraph Reading	21.77	6.96	22.71	3.70	20.96	4.34	-1.66	1.28	4.11 **

* Significant at the .05 Level
** Significant at the .01 Level

to TO. The LEA group also made the highest scores on the Word Recognition and Paragraph Reading tests of the Gates Primary Reading Battery.

It was evident from the tests that LEA children had some advantage over ITAA and BRA in second grade. Part of this advantage might well have been attributed to the approach used.

4. Will there be a significant difference in the oral word attack skills of young people among the three approaches?

Tables 7 and 8 summarized the data provided to examine the oral reading of young people involved in this research. No significant differences were noted when the Gilmore Oral Reading Paragraphs were given to a selected sample of children in each classroom.

It was interesting to note that the speed of oral reading at second grade, in terms of mean scores, ranged from 87 to 93 w.p.m. At third grade the range moved up to 113 to 122 w.p.m. The large standard deviations indicated that speed of oral reading varied considerably within each treatment group.

As indicated before, the Gates Word List which was administered orally revealed a significant difference between ITAA-LEA groups and BRA. At the third grade level, possibly due to the limited range of the test, these differences were not significant.

5. Will there be a signficant difference in the measured achievement of boys versus girls among the three appreaches?

Tables 12 through 17 served to summarize the data for this study. In the ITAA, boys made significantly higher scores than girls, at the .01 level, in knowledge of Science and Social Studies Concepts. Girls,

TABLE 12

ITAA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- SECOND GRADE

	BOYS N=112		GIRLS N=88		
TESTS	Mean	S.D.	Mean	S.D.	t Tests
STANFORD ACHIEVEMENT					
Word Meaning	19.86	7.91	20.06	7.30	-0.18
Paragraph Meaning	30.92	13.45	33.65	12.27	-1.46
Sci. & Soc. Stud. Concepts	21.50	5.74	17.88	5.07	4.58 **
Spelling	13.96	7.86	17.37	7.72	-3.05 **
Word Study	39.01	11.99	42.00	13.07	-1.67
Language	36.20	10.25	39.24	10.06	-2.09 *
Arith. Concepts	20.12	8.96	21.17	8.75	-0.83
Arith. Comp.	20.90	9.60	19.96	9.19	0.70
PINTNER CUNNINGHAM	39.56	9.20	39.89	7.77	-0.27
NUMBER OF BOOKS READ	6.54	5.30	9.62	7.80	-3.00 **
GATES PRIMARY WORD RECOGNITION	36.96	13.19	38.16	12.37	-0.53
GATES PRIMARY PARAGRAPH READING	21.03	7.36	22.53	7.02	-1.18
	SMALL SAMPLE				
GATES WORD LIST	24.90	10.07	27.72	6.70	-1.22
GILMORE - RATE	83.23	39.72	98.19	22.42	-1.69
ACCURACY	33.97	18.83	42.70	18.33	-1.75
WRITING SAMPLE					
Running Words	50.30	23.72	79.62	36.88	-3.39 **
Different Words	31.19	13.14	41.15	12.45	-2.72 **
Number of Words Spelled Correctly	42.00	22.24	70.92	36.68	-3.42 **
Number of Polysyllabic Words	10.37	5.03	18.42	7.77	-4.41 **
Mechanics Ratio Scale	50.75	18.59	58.12	20.67	-1.34

* Significant at .05 Level
** Significant at .01 Level

TABLE 13

ITAA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- THIRD GRADE

	BOYS N=89		GIRLS N=89		
TESTS	**Mean**	**S.D.**	**Mean**	**S.D.**	**t Tests**
STANFORD ACHIEVEMENT					
Word Meaning	25.21	6.86	25.79	5.72	-0.60
Paragraph Meaning	40.48	12.29	43.23	11.02	-1.55
Sci. & Soc. Stud. Concepts	25.49	6.04	22.65	6.08	3.11 **
Spelling	19.06	7.77	22.43	6.94	-3.04 **
Word Study	44.91	13.38	48.25	12.79	-1.70
Language	44.27	12.03	49.92	12.50	-3.08 **
Arith. Concepts	34.10	10.20	35.09	10.80	-0.62
Arith. Comp.	29.38	10.03	29.98	10.04	-0.40
PINTNER CUNNINGHAM	39.29	9.14	40.94	8.12	-1.37
NUMBER OF BOOKS READ	72.83	70.78	95.91	99.12	-1.82
	SMALL SAMPLE				
GATES WORD LIST	31.06	7.82	33.67	5.11	-1.22
GILMORE - RATE	100.22	38.87	124.62	25.35	-2.29 *
ACCURACY	48.61	25.15	49.95	20.09	-0.18
WRITING SAMPLE					
Running Words	66.07	37.10	86.38	50.94	-1.24
Different Words	34.43	15.82	38.19	18.35	-0.61
Number of Words Spelled Correctly	61.86	38.48	74.14	46.95	-0.79
Number of Polysyllabic Words	8.79	6.65	17.05	26.36	-1.12
Mechanics Ratio Scale	66.00	12.76	74.48	18.38	-1.46

* Significant at .05 Level
** Significant at .01 Level

TABLE 14

LEA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- SECOND GRADE

	BOYS		GIRLS		
	N=95		N=108		
TESTS	Mean	S.D.	Mean	S.D.	t Tests
STANFORD ACHIEVEMENT					
Word Meaning	20.11	7.11	22.57	6.89	-2.49 *
Paragraph Meaning	33.70	11.51	34.86	10.83	-0.73
Sci. & Soc. Stud. Concepts	21.97	5.24	19.71	4.79	3.19 **
Spelling	14.54	7.70	17.28	7.92	-2.48 *
Word Study	40.66	11.89	40.66	10.81	0.00
Language	38.58	9.51	40.68	8.82	-1.62
Arith. Concepts	21.68	7.17	22.12	8.12	-0.40
Arith. comp.	22.31	7.62	20.81	7.94	1.35
PINTNER CUNNINGHAM	40.68	6.37	41.41	7.35	-0.74
NUMBER OF BOOKS READ	12.98	9.65	17.90	15.40	-2.47 *
GATES PRIMARY WORD RECOGNITION	41.28	8.47	43.71	7.08	-2.05 *
GATES PRIMARY PARAGRAPH READING	22.41	3.96	23.19	2.91	-1.48
SMALL SAMPLE					
GATES WORD LIST	24.24	8.31	28.30	7.57	-1.91
GILMORE - RATE	90.52	33.65	103.00	34.28	-1.38
ACCURACY	36.48	13.18	44.11	16.31	-1.90
WRITING SAMPLE					
Running Words	72.58	40.40	85.77	44.23	-1.15
Different Words	40.38	15.41	46.63	19.00	-1.32
Number of Words Spelled Correctly	61.88	36.69	77.63	42.96	-1.44
Number of Polysyllabic Words	14.92	6.93	18.97	14.32	-1.27
Mechanics Ratio Scale	54.64	17.33	55.91	15.59	-0.29

* Significant at .05 Level
** Significant at .01 Level

TABLE 15

LEA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- THIRD GRADE

	BOYS N=81		GIRLS N=94		
TESTS	Mean	S.D.	Mean	S.D.	t Tests
STANFORD ACHIEVEMENT					
Word Meaning	26.75	5.64	25.45	5.64	1.52
Paragraph Meaning	41.95	11.02	42.40	9.59	-0.28
Sci. & Soc. Stud. Concepts	25.67	4.97	23.86	6.77	1.98 *
Spelling	20.52	6.93	22.48	6.27	-1.95
Word Study	43.88	11.19	44.12	12.58	-0.13
Language	45.33	10.32	49.22	9.71	-2.55 *
Arith. Concepts	34.27	10.12	34.69	10.62	-0.27
Arith. Comp.	31.44	7.93	28.28	8.30	2.56 *
PINTNER CUNNINGHAM	40.74	6.37	41.61	7.24	-0.88
NUMBER OF BOOKS READ	66.86	46.18	99.25	65.72	-3.73 **
SMALL SAMPLE					
GATES WORD LIST	32.22	6.19	33.74	6.05	-0.73
GILMORE - RATE	109.56	31.29	125.21	40.17	-1.28
ACCURACY	40.67	18.39	53.11	23.99	-1.71
WRITING SAMPLE					
Running Words	56.22	27.26	77.32	42.49	-1.74
Different Words	32.56	13.61	41.26	17.49	-1.64
Number of Words Spelled Correctly	51.67	25.37	74.37	41.82	-1.93
Number of Polysyllabic Words	6.67	4.23	11.37	9.44	-1.88
Mechanics Ratio Scale	71.28	14.74	78.95	15.40	-1.50

* Significant at .05 Level
** Significant at .01 Level

TABLE 16

BRA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- SECOND GRADE

	BOYS N=109		GIRLS N=99		
TESTS	Mean	S.D.	Mean	S.D.	t Tests
STANFORD ACHIEVEMENT					
Word Meaning	18.94	6.85	19.65	5.80	-0.80
Paragraph Meaning	29.87	11.78	31.92	9.65	-1.36
Sci. & Soc. Stud. Concepts	20.07	5.55	18.31	5.36	2.31*
Spelling	12.81	7.84	15.26	7.10	-2.33*
Word Study	37.01	12.04	39.13	12.31	-1.25
Language	36.26	10.03	39.04	10.34	-1.97 *
Arith. Concepts	20.19	8.80	23.39	8.27	-2.68 **
Arith. Comp.	19.94	8.57	20.52	9.05	
PINTNER CUNNINGHAM	39.99	8.09	39.18	7.35	0.75
NUMBER OF BOOKS READ	7.04	7.08	9.16	7.85	0.75
GATES PRIMARY WORD RECOGNITION	37.60	8.38	39.88	8.26	-1.37
GATES PRIMARY PARAGRAPH READING	20.51	4.03	20.95	3.99	-0.46
SMALL SAMPLE					
GATES WORD LIST	23.57	7.38	23.77	5.36	-0.11
GILMORE - RATE	91.82	30.33	97.60	27.57	-0.59
ACCURACY	39.06	18.28	37.60	8.63	0.31
WRITING SAMPLE					
Running Words	72.06	32.34	56.30	33.92	1.42
Different Words	37.67	11.98	34.30	17.98	0.68
Number of Words Spelled Correctly	62.22	30.14	51.30	32.31	1.05
Number of Polysyllabic Words	16.11	7.80	13.75	8.72	0.85
Mechanics Ratio Scale	58.56	19.57	64.40	17.39	-0.95

* Significant at .05 Level
** Significant at .01 Level

TABLE 17

BRA SUMMARY OF TEST DATA
BOYS VERSUS GIRLS -- THIRD GRADE

	BOYS N=73		GIRLS N=74		
TESTS	Mean	S.D.	Mean	S.D.	t Test
STANFORD ACHIEVEMENT					
Word Meaning	24.91	8.71	25.39	8.19	-0.35
Paragraph Meaning	38.32	12.12	40.85	10.08	-1.37
Sci. & Soc. Stud. Concepts	25.30	5.19	23.22	5.94	2.25 *
Spelling	17.03	8.71	20.77	6.39	-2.97 **
Word Study	40.37	14.54	42.73	12.82	-1.04
Language	43.73	11.38	47.70	11.59	-2.08 *
Arith. Concepts	29.77	10.98	31.77	11.69	-1.06
Arith. Comp.	27.88	9.87	26.21	9.86	1.02
PINTNER CUNNINGHAM	40.35	7.82	39.42	7.61	0.88
NUMBER OF BOOKS READ	57.02	50.96	71.00	53.60	-1.51
SMALL SAMPLE					
GATES WORD LIST	31.57	7.07	32.24	6.01	-0.27
GILMORE - RATE	121.86	29.13	123.65	30.08	-0.16
ACCURACY	44.00	21.37	54.00	22.02	-1.23
WRITING SAMPLE					
Running Words	62.27	37.20	77.15	31.17	-1.02
Different Words	32.09	8.08	40.62	11.12	-2.02
Number of Words Spelled Correctly	111.27	159.84	73.92	31.23	0.79
Number of Polysyllabic Words	17.00	30.85	11.77	7.81	0.56
Mechanics Ratio Scale	87.00	10.06	83.62	12.85	0.68

* Significant at .05 Level
** Significant at .01 Level

however, made higher scores on all of the other tests. They were significantly stronger in Spelling and Language at the close of second and third grades. It is interesting to note that the ITAA second grade girls were quite verbal but significant differences in Writing Sample did not continue through third grade.

Second grade LEA girls excelled the boys on all tests noted on Table 14 except Science and Social Studies Concepts and Arithmetic Computation. Girls made significantly high scores on Word Meaning, Spelling, Word Recognition and in the number of books used. At third grade, Table 15, the advantage in Word Meaning had reversed, boys now excelled in Science and Social Studies Concepts and Arithmetic Computation. Girls continued to excell in Spelling and Language as well as the number of books read.

In BRA, Tables 16 and 17, the differences in achievement between boys and girls was not as great as they were for the ITAA group. Second and third grade boys made higher scores than girls, significant at the .05 level, in knowledge of Science and Social Studies Concepts, while girls made higher scores consistently in Spelling and Language. The difference in the numbers of books read between boys and girls was not signficant.

The patterns of performance by boys versus girls appeared to be very similar among the three approaches in this study. The differences, however, were strongest in the ITAA group. Boys excelled girls in Science and Social Studies Concepts but the pattern was no as conclusive for Arithmetic Concepts and Computations. Girls were better spellers and more skilled with language usage.

6. Will there be a signficant difference in the number and nature of the books read among children in the three approaches?

The data concerning the number of books read by young people were summarized on Table 18 according to the approach used. At the second grade level, the intensive survey of individual reading made in February, 1966, provided the most reliable results. The average books read in ITAA, LEA and BRA were 8, 16, and 8. LEA pupils appeared to read twice as many as those in the other two groups. At the third grade level, the numbers of books read averaged 84, 84, and 63. It appeared that young people in ITAA and LEA read a similar number over a nine month period while BRA children read signficantly fewer books. The large standard diviation noted suggests that there was a tremendous range in the number of books read by pupils within each classroom.

As titles of books read were submitted for examination, long lists were prepared in an effort to study the nature and quality of the reading accomplished. This was a futile task. Choice of books was often limited to school libraries, home libraries and paperback clubs. Young people seemed to read anything within easy reach. The factors within the books which determine choice were not discovered.

Results of the Survey of Student Attitude Inventory was reported on Table 19. On this test, the BRA children seemed to have a more favorable attitude towards reading when results were compared with the other two groups. Differences between ITAA and BRA were signficant at the .05 level.

It was of interest to discover that young people thoroughly enjoyed reading what each other had written, particularly when the material was typed or attractively published.

TABLE 18

SURVEY OF BOOKS READ
Second and Third Grades

	ITAA		LEA		BRA		t TESTS		
No. of Books Read	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA-LEA	ITAA-BRA	LEA-BRA
Second Grade - One Month Survey	7.67	6.65	15.56	13.27	8.16	7.46	-7.85**	-0.72	7.11**
Third Grade - Nine Months Survey	84.18	86.67	83.80	59.44	63.17	52.32	0.05	2.48*	3.18**

TABLE 19

SURVEY OF STUDENT ATTITUDE INVENTORY
Second Grade

	ITAA		LEA		BRA		t TESTS		
	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA-LEA	ITAA-BRA	LEA-BRA
Raw Scores	17.67	5.11	18.16	4.61	18.71	4.61	-1.04	-2.22*	-1.23

* - Significant at .05 Level
** - Significant at .01 Level

7. Will there be significant differences in the oral and written vocabularies together with related language skills among the three approaches?

A summary of the data for this study, obtained from personal interviews and written compositions, was recorded on Tables 21 and 22. The devices which were used to evaluate writing were also employed for oral communication to make a comparative analysis possible. During the interviews at the close of second grade, LEA and BRA children used significantly more words than ITAA subjects. It was difficult to account for these differences, possibly they were caused by the shyness of certain boys and girls who became very much aware of the tape recorder.

In an examination of the number of polysyllabic words used by subjects for each approach, it appeared that the ITAA children were less articulate. The percentage of polysyllabic words to the number of different words used were:

ITAA -- 21%, LEA -- 28%, BRA -- 29%

It was interesting to note at the close of the third grade that the young people were using more longer words and that differences among the three approaches had changed:

ITAA -- 34%, LEA -- 32%, BRA -- 36%

After three years of instruction, the BRA children appeared more verbal. The differences between LEA and BRA were significant in the number of polysyllabic words used in the interview. It appeared that the stress on integration of the language arts and greater freedom to write and read had not necessarily given ITAA and LEA children an advantage over BRA subjects in oral communication.

TABLE 20

SUMMARY OF RESULTS OF ORAL SAMPLE, SECOND GRADE
May 1966

	ITAA		LEA		BRA		t TESTS		
	N=26		N=25		N=20				
ORAL SAMPLE	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA - LEA	ITAA - BRA	LEA - BRA
Running Words	62.92	42.46	89.04	41.56	95.55	44.87	-2.18*	-2.53	-0.50
No. of Different Words	33.92	17.85	45.36	15.61	50.69	18.13	-2.38*	-3.15**	-1.06
No. of Polysyllabic Words	7.04	5.17	9.68	5.61	12.50	7.54	-1.71	-2.90*	-1.43

TABLE 21

SUMMARY OF RESULTS OF ORAL SAMPLE, THIRD GRADE
May 1967

	ITAA		LEA		BRA				
	N=26		N=24		N=20				
ORAL SAMPLE	MEAN	S. D.	MEAN	S. D.	MEAN	S. D.	ITAA - LEA	ITAA - BRA	LEA - BRA
Running Words	131.50	36.65	127.63	41.29	143.00	24.23	0.34	-1.19	-1.43
No. of Different Words	60.88	15.29	59.75	17.48	68.60	13.21	0.24	-1.76	-1.82
No. of Polysyllabic Words	21.42	7.81	18.58	8.20	25.20	7.04	1.23	-1.66	-2.78*

* - Significant at .05 Level
** - Significant at .01 Level

TABLE 22

SUMMARY OF RESULTS OF WRITING SAMPLE, SECOND GRADE
May 1966

WORD STUDY	ITAA N=32 Mean	 S.D.	LEA N=36 Mean	 S.D.	BRA N=27 Mean	 S.D.	t Tests ITAA/LEA	 ITAA/BRA	 LEA/BRA
Running Words	59.0	33.4	73.6	43.7	59.6	35.1	-3.66 **	-0.16	3.29**
No. of Different Words	36.08	13.59	42.66	18.13	36.37	16.05	-4.00 **	-0.18	3.44**
No. of Words Spelled Correctly	50.8	32.6	64.4	40.3	53.3	33.2	-3.62 **	-0.70	2.80**
No. of Polysyllabic Words	14.34	7.43	16.91	11.84	14.63	8.83	-2.53 *	-0.33	2.02*
Mechanics Ratio Scale	51.6	19.4	51.4	17.4	56.3	19.2	2.10 *	-2.26*	-2.53*

* Significant at .05 Level

** Significant at .01 Level

TABLE 23

SUMMARY OF RESULTS OF WRITING SAMPLES, THIRD GRADE
May 1967

WORD STUDY	ITAA N=35 Mean	ITAA N=35 S.D.	LEA N=37 Mean	LEA N=37 S.D.	BRA N=24 Mean	BRA N=24 S.D.	t Tests ITAA/LEA	t Tests ITAA/BRA	t Tests LEA/BRA
Running Words	78.26	46.98	67.05	37.41	70.33	34.87	1.11	0.69	-0.34
No. of Different Words	36.69	17.48	37.03	16.31	36.71	10.72	-0.08	-0.01	0.08
No. of Words Spelled Correctly	69.23	44.17	63.32	36.61	62.04	35.24	0.61	0.72	0.13
No. of Polysyllabic Words	13.74	21.24	9.08	7.74	14.17	21.82	1.23	-0.07	-1.28
Mechanics Ratio Scale	71.09	16.89	75.22	15.56	85.17	11.78	-1.06	-3.47**	-2.63*

* Significant at .05 Level

** Significant at .01 Level

Table 22 was used to record the summarized data on written compositions employing the Mechanics Ratio Scale, At the second grade level, it appeared that the LEA subjects wrote signficantly more than pupils in the other two groups. Thus, the former used more different words and more polysyllabic words. The percentage ratio of polysyllabic to different words was :

ITAA -- 39%, LEA -- 40%, BRA -- 42%

BRA subjects misspelled fewer words and made signficantly higher scores on the scale which measured knowledge of English mechanics in writing.

In comparing the oral and written sample at second grade, it was evident that children used a greater percentage of polysyllabic words in writing than they did in spelling. It will be noted that this difference was not as large at the close of the third grade.

The results of the third grade writing sample study were recorded on Table 23. Once more significant differences were noted between BRA and the ITAA - LEA subjects in an examination of English mechanics. The systematic training in English usage employed by BRA pupils was probably more effective than the personalized instruction employed by teachers in the other two groups.

The percentage of polysyllabic words to the number of different words was determined as follows:

ITAA -- 38%, LEA -- 25%, BRA -- 38%

On the writing sample used for this study,the LEA children apparently used far more shorter words to express their thoughts.

The study showed that the gap between the speaking and writing vocabularies of primary grade children started to close at the end of the third year. In most instances, however, children continued to use longer words for writing than they used in speaking.

> 8. Will there be significant changes in the linguistic maturation of pupils as measured by the Hunt Indices among the three approaches?

The five indices which Kellogg Hunt demonstrated were effective in studying changes in the writing skills of students were also used to study the oral responses of subjects in this study. Table 24 and 25 summarized thr oral and writing samples collected at the close of second grade and again at third grade levels.

The tables presented the basic data -- clause count, T unit count and sentence count -- from which the indices were determined. The T unit was defined as a main clause plus any subordinate clause which was attached. The length of the T unit, Hunt believed, was closely tied to maturity. He noted:

> "The younger student produces short separate units. His span of grammatical concern or attention is narrow. As he matures, he consolidates by discarding words, his redundancy lessens and his succinctness gains." (12 pg. 161)

Oral Sample

ITAA subjects at the second grade level appeared to use significantly shorter clauses and T units as well as somewhat shorter sentences in their oral interviews, recorded in the classrooms. The percentages of clause subordination among the three approaches were noted as follows:

ITAA -- 64%, LEA -- 55%, BRA -- 59%

BRA subjects at the third grade level used significantly longer clauses and provided a higher percentage of clause subordination. The results showed that the BRA subjects used larger T units indicating greater linguistic maturity.

It was interesting to note that main clause coordination in the interviews increased from second to third grade. This indicated children used more ands and similar connectors in tying together their ideas. Longer sentences were used in all approaches at the close of third grade. T units for the ITAA and BRA subjects also increased.

Writing Sample

The writing sample data, recorded on Table 25, showed that the second grade ITAA subjects used fewer but longer clauses and demonstrated a lower incidence of clause subordination. The percentages of clause subordination were:

ITAA -- 23%, LEA -- 38%, BRA -- 35%

It was interesting to note these changes at the close of third grade:

ITAA -- 36%, LEA -- 32%, BRA -- 55%

LEA subjects used clause subordination more extensively at the close of second grade then they did at the third. In contrast ITAA and BRA showed marked improvement.

At the third grade level, BRA subjects used shorter clauses than those in the other two groups but employed signficantly more subordination. The results showed that the number of words in the T units for all three approaches were quite similar.

TABLE 24

SUMMARY FOR HUNT INDICES -- ORAL SAMPLE

SECOND GRADE

		ITAA N=26		LEA N=25		BRA N=20		ITAA/LEA	ITAA/BRA	LEA/BRA
		Mean	S.D.	Mean	S. D.	Mean	S. D.			
Clause Count	Total	10.35	6.55	13.24	6.09	14.45	6.46	-1.60	-2.13 *	-0.65
T Unit Count	Total	7.38	3.86	9.56	4.20	9.73	4.19	-1.89	-1.97	-0.13
Sentence Count	Total	6.46	3.13	8.52	3.43	8.82	3.52	-2.20 *	-2.40 *	-0.29
Clause Length	Index	5.86	1.78	7.10	2.37	6.35	2.17	-2.08 *	-0.85	-1.10
Sub Clause	Index	1.32	.29	1.37	.41	1.46	.50	-0.52	-1.23	-0.67
T Unit Length	Index	7.83	2.80	9.37	2.64	9.37	3.31	-1.98	-1.71	0.00
Main Clause Corrd.	Index	1.12	.14	1.11	.12	1.05	.24	0.39	1.41	1.17
Sentence Length	Index	9.01	3.99	10.51	3.22	10.14	3.38	-1.44	-1.02	0.38

THIRD GRADE

		ITAA N=26		LEA N=24		BRA N=20		ITAA/LEA	ITAA/BRA	LEA/BRA
		Mean	S.D.	Mean	S. D.	Mean	S. D.			
Clause Count	Total	23.58	7.42	21.67	7.59	21.50	4.71	0.88	-1.07	0.08
T Unit Count	Total	13.58	3.93	13.88	4.17	13.80	3.09	-0.25	-0.20	0.07
Sentence Count	Total	11.42	3.47	10.96	3.77	11.35	2.59	0.45	0.08	-0.38
Clause Length	Index	5.73	1.24	5.97	1.08	6.75	.93	0.70	-3.00 **	-2.49 *
Sub Clause	Index	1.64	.31	1.55	.35	1.59	.27	0.84	0.50	-0.37
T Unit Length	Index	9.92	2.28	9.18	1.90	10.62	1.89	1.20	-1.10	-2.45 *
Main Clause Coord.	Index	1.21	.20	1.32	.23	1.22	.12	-1.85	-0.24	1.77
Sentence Length	Index	11.69	2.30	11.89	3.10	12.95	2.42	-0.26	-1.76	-1.21

* Significant at .05 Level
** Significant at .01 Level

TABLE 25

SUMMARY FOR HUNT INDICES -- WRITING SAMPLE

SECOND GRADE

		ITAA N=32		LEA N=36		BRA N=27		ITAA/LEA	ITAA/BRA	LEA/BRA
		Mean	S.D.	Mean	S.D.	Mean	S.D.			
Clause Count	Total	10.91	4.83	14.69	9.27	13.30	8.40	-2.04 *	-1.34	0.61
T Unit Count	Total	8.78	3.76	10.72	6.50	9.63	5.22	-1.46	-0.71	0.71
Sentence Count	Total	7.19	3.58	9.44	6.32	7.63	4.21	-1.75	-0.43	1.27
Clause Length	Index	7.50	1.71	5.51	1.50	5.46	1.56	1.09	.96	0.13
Sub Clause	Index	1.23	.17	1.38	.23	1.35	.29	-2.72 *	-1.83	0.36
T Unit Length	Index	5.96	1.53	7.50	1.96	7.29	2.27	-1.24	-0.66	0.38
Main Clause Corrd.	Index	1.29	.36	1.24	.39	1.30	.38	0.56	-0.06	-0.59
Sentence Length	Index	9.03	3.27	9.69	5.32	9.43	4.22	-0.60	-0.40	0.21

THIRD GRADE

		ITAA N=35		LEA N=37		BRA N=24		ITAA/LEA	ITAA/BRA	LEA/BRA
		Mean	S.D.	Mean	S.D.	Mean	S.D.			
Clause Count	Total	11.09	6.97	9.81	5.78	15.04	15.07	0.83	-1.33	-1.87
T Unit Count	Total	8.23	4.36	7.62	4.19	10.21	10.70	0.59	-0.97	-1.30
Sentence Count	Total	7.46	3.71	6.92	3.81	8.79	9.44	0.60	-0.74	-1.06
Clause Length	Index	7.35	1.78	7.27	1.90	6.27	1.56	0.18	2.35 *	2.11 *
Sub Clause	Index	1.36	3.16	1.32	.31	1.55	.44	0.62	-1.86	-2.37 *
T Unit Length	Index	9.92	2.97	9.17	2.48	9.44	2.34	1.15	-0.64	-0.43
Main Clause Coord.	Index	1.11	2.29	1.10	.16	1.19	.30	0.18	-1.22	-1.54
Sentence Length	Index	10.83	3.38	10.03	2.99	11.06	2.86	1.06	-0.26	-1.31

* Significant at .05 Level
** Significant at .01 Level

Main clause coordination for all three approaches was lower at the three grade levels. This was a desired change. It was also noted that during the two year period increases were apparent in the number of words in the clauses, sentences, and T units. This data together with increased clause subordination demonstrated continued maturation in writing abilities. It appeared, however, that no one approach excelled in providing for accleration in linguistic maturity.

9. Will there be a statistically significant difference in the measured creativity of the children being taught by the three reading approaches?

The creativity data was summarized on Table 26 and 27. It was important to note that the standard deviations were rather large, indicating a wide reange of responses among the subjects in each approach.

TABLE 26

SUMMARY OF CREATIVITY SCORES -- THIRD GRADE

Approach	No.	Fluency		Flexibility		Originality	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
LEA	33	90.6	40.6	32.9	8.4	26.5	15.05
ITAA	33	80.7	30.15	35.4	10.73	27.3	14.93
BRA	30	84.3	18.74	33.9	6.2	25.3	9.77

The scores shown on Table 26 were tested for statistical significance and summarized on Table 27.

TABLE 27

SIGNIFICANCE OF CREATIVITY SCORES -- THIRD GRADE

Groups	Fluency	Flexibility	Originality
LEA-BRA	.80	.70	.35
LEA-ITAA	1.12	1.18	.24
ITAA-BRA	1.00	.69	.63

No significant differences were found at the .05 level. It is interesting to note that ITAA subjects made the higherest scores in flexibility and originality and the lowest in fluency.

10. Will there be a signficant differences in the measured creativity for boys and for girls as a group regardless of the reading approach used?

The scores of boys and girls were treated separately for fluency, flexibility, and originality and were summarized on Table 28.

TABLE 28

SUMMARY OF CREATIVITY SCORES BY SEX -- THIRD GRADE

Sex	No.	Fluency		Flexibility		Originality	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
Boys	51	86.8	33.99	34.2	8.14	26.7	13.05
Girls	45	83.5	28.82	33.96	9.47	26.3	14.18

The results of the tests of significance for the difference noted appeared on Table 29.

TABLE 29

TEST OF SIGNIFICANCE OF CREATIVITY SCORES - BOYS VS GIRLS

	Fluency	Flexibility	Originality
Boys-Girls	.51	.24	.18

No significant differences were found at the .05 level. Indeed, the mean scores were so similar and the standard deviations so large that further study of this data seemed to be superflous. However, this data was summarized separately for girls and boys on Tables 30 and 31.

TABLE 30

GIRLS CREATIVITY SCORES BY READING APPROACH -- THIRD GRADE

Program	No.	Fluency		Flexibility		Originality	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
ITAA	16	72.56	27.78	33.88	12.68	26.06	17.14
LEA	15	90.87	35.65	33.74	9.16	26.93	15.83
BRA	14	87.71	20	34.28	5.8	25.93	8.34

TABLE 31

BOYS CREATIVITY SCORES BY READING APPROACH -- THIRD GRADE

Program	No.	Fluency		Flexibility		Originality	
		Mean	S.D.	Mean	S.D.	Mean	S.D.
ITAA	17	88	32.2	36.88	9.07	28.58	13.45
LEA	18	90.4	46.41	32.22	8.23	26.27	15.27
BRA	19	81.4	18.33	33.68	6.89	25.7	10.73

LEA girls and boys provided the broadest range of responses on the fluency test which measured the number of different ideas they could provide for the stimulus used.

11. Will there be a difference in the curriculum adjustment necessary to conduct this research project among the three approaches?

The data for this study was collected during in-service sessions, through teacher evaluations submitted at the close of each school year and by the use of the Research Project Survey interviews with school principals.

The most extensive curriculum adjustments were made by ITAA and LEA schools at the beginning of first grade. A minimum investment of $500.00 per ITAA classroom was suggested to insure the young people of a complete program in all aspects of the language arts. Similar adjustments were made to insure availability of materials for LEA, however, the investment was much smaller.

At the second and third grade levels, curriculum adjustments in terms of the purchase of new materials or in the administration of the program was not extensive for ITAA or LEA. Possibly, the fact that a greater variety of new materials were not introduced resulted in fewer differences among the three approaches. It is probable that more ITAA children would have continued to use ITA materials for a longer period of time if more adequate provisions had been made for this transitional provision stage. It is possible, too, that the extensive training in word analysis for the two experimental groups would have continued throughout second grade if additional resources had been employed.

The transition from ITA to TO required a complete review of word attack skills. The second grade teachers were not fully aware of the implications of this need at the start of the program, however, they developed a program as they progressed through the years. As Downing indicated in his report, the transitional period is a difficult one in terms of the teacher's role. It continued to be a problem in this study although most children made a satisfactory transfer.

Teachers and administrators in each of the three programs noted increased use of art supplies, tape recorders, listening posts, dramatization, and paper supplies. All groups reported a marked increase in library usage and in the development of classroom libraries. The emphasis placed upon writing stirred a continued interest in classroom publications and the use of parents to serve as assistants in binding materials for classroom use. As the research staff continued to collect data on oral and written communication skills as well as the number of books read in each approach, BRA teachers in this study naturally developed concern for these elements.

Initially, research teachers using the ITAA and LEA approaches were apprehensive regarding the prospects of shifting from directed reading instruction to individualized reading on alternate months. This apprehension tended to decrease with experience and the majority of the teachers adjusted to the schedule satisfactorily.

The use of the Botel Multi-Level Spellers with ITAA and LEA subjects was planned for second grade but not started until the third year because of administrative problems in purchasing. The use of pupil-team learning experiences became more extensive with this program. Most teachers resolved the pacing and grouping problems in spelling but not without considerable discussion.

The school administrators rated the program for each of the three approaches as being "somewhat" to "very effective" with one exception. One ITA principal was "undecided" about the program used in his school. The LEA administrators were the most supportive.

LEA practices which encouraged children to write extensively and to read widely continued in the ITAA, LEA, and to a large extent in the BRA classrooms the year following this study. Teachers discovered that primary children welcomed opportunities to express their thoughts freely in writing.

The ITA programs which started in 1964 had begun to disappear by the 1967-68 school year. Five of the twelve original schools continued with ITA. A few ITA teachers lost interest in the new alphabet and others were not replaced with ITA oriented teachers when they left the school district. Enthusiasm for ITA continued among those schools using the program.

No particular difficult parent problems were encountered. Parent interest in all three approaches was positive.

In-service instruction was rated as being very effective by teachers and administrators among the three approaches. The practice of sharing promising instructional practices among teachers from neighboring school districts was greeted most favorably. The ideas gleaned from the in-service programs were shared with other teachers in their school building according to the principals. The entire language arts curricula of two of the school districts involved in this research were modified to include instructional practices provided in the LEA program.

CHAPTER V

RESULTS AND IMPLICATIONS

This project served as an extension of the first grade study initiated in 1964 to determine the relative effectiveness of three approaches to beginning reading instruction designated as; ITAA, LEA, and BRA. Two of the experimental approaches, one in ITA and the other in TO, used similar methodologies which accelerated instruction in word analysis and encouraged young people to become independent and self-reliant by providing them many opportunities for oral and written expression and for individualized as well as directed reading instruction. The third approach employed traditional practices suggested by teacher manuals of respected basal readers and by the teacher guides of related language arts textbooks.

The data collected for the residual population during the second and third years of the study were analyzed for significant differences and were reported in Chapter IV.

SUMMARY

1. The academic achievement of ITAA and LEA subjects consistently equalled or in some instances slightly excelled those in BRA on standardized achievement tests at the close of second and third year. ITAA results were significantly higher on tests of spelling and word study. While, LEA results were better than BRA in spelling and paragraph comprehension. Differences between ITAA and LEA subjects were negligible throughout this report when the total population was considered.

2. ITAA subjects with the highest intelligence scores achieved somewhat higher scores in word study and language development when compared with their counterparts in LEA and BRA.

No significant differences were found among the three approaches in the studies of young people with the lowest intelligence scores.

3. LEA subjects made significantly higher scores on reading tests concerned with word recognition and paragraph comprehension as well as on intelligence test administered early in second grade. As the results on the Pintner-Cunningham Test, administered in first grade, continued to reveal no signficant differences, it would appear that certain advantages had accrued to LEA subjects. It must be noted that at the beginning of second grade BRA subjects were gradually being introduced to word analysis skills which were familiar to those in LEA while ITAA children, for the most part, were still in the transitional stage moving from ITA to TO.

4. ITAA subjects continued to recognize the largest number of words on a word list at the close of the second year; however, no significant differences were found among the three approaches at the close of the third year. Differences in speed and accuracy of oral reading noted throughout this study were negligible.

5. In the study of sex differences, a consistent pattern appeared among subjects in the three approaches. Boys made the highest achievement scores on the science and social studies concepts tests while girls excelled in spelling and language development.

6. LEA subjects appeared to read the most books during the second year. At the close of the third year, ITAA and LEA subjects

were reading significantly more than those in BRA. This data tended to be highly subjective.

7. Differences in vocabulary development as revealed in the studies of children's oral interviews and written compositions among the three approaches were inconclusive. At the close of the second year, the young people used more polysyllabic words in writing then in speaking; however, this pattern was not entirely consistent at the close of the third grade.

8. It was important to note that BRA subjects consistently demonstrated a greater knowledge of the mechanics of English usage on written compositions at second and third grades.

9. Application of the Kellogg Hunt's Indices for studying linquistic maturation provided interesting insights regarding the oral and written expression of subjects in this study. Over the two year period, the young people made definite progress in using more words in clauses, sentences and T-units in their oral and written expression.

BRA subjects at the close of the third year, used significantly more words in clauses and provided for more clause subordination in oral interviews. The results, therefore, showed that they used longer T-units for oral expression. In writing, however, the BRA subjects used shorter clauses but employed significantly more clause subordination. Thus, at the close of the third year, the differences in the number of words used in T-units in written compositions were not significant among the three approaches.

10. Studies of tests of fluency, flexibility and originality, all elements of creativity according to Torrance, revealed negligible differences among the three approaches.

11. No significant sex differences were found in the creativity study.

12. Serious curriculum adjustments were not encountered in this project. The most pressing problem resulted from the fact that ITAA and LEA teachers had not had extensive experience or training in the language experience and individualized reading methods they were asked to employ throughout the year. Their training, for the most part, was provided through in-service meetings. Unfortunately, close supervision because of georgraphic factors was impossible. Skill and confidence on the part of many of the experimental teachers developed slowly and was most evident during the second half of each of the two school years of this project when they had become thoroughly familiar with the program.

The transition from ITA to TO occurred without too much difficulty on the part of the young people; however, this was a puzzling experience for teachers who found it necessary to provide thorough review of basic word analysis skills in TO.

Administrators among all three approaches reported that the subjects in this study made greater use of the library, as well as audio-visual aids and art supplies. The research subjects also engaged in more writing, more dramatization and more bookmaking then young people not involved in this project.

BRA teacher interest in providing opportunities for reading, writing, and speaking was spurred by the many surveys of book reading and by the collection of samples of children's written and spoken words.

Seven of the twelve schools which used ITA in first grade for this project discontinued the use of the new alphabet by the time the three year study was completed. The five remaining schools endorsed the use of ITA.

The interest in continuing with language experience and modified individualized reading instruction was practically unanimous among the experimental schools and was viewed with considerable interest by BRA teachers.

Evidence of the interest and impact of this research project was demonstrated by the response of more than 100 elementary schools to the first annual Young Authors' Conference sponsored by the School of Education, Oakland University, in May, 1967. The conference plans originated in the project's in-service program for teachers. More than 450 young authors, grades one through six, were choosen by their peers to attend. The second conference scheduled in April, 1968, attracted 850 young authors from 205 elementary schools.

The project also precipitated the organization of Oakland University's Learning Strategy Center in the fall of 1967. The center was sponsored by eight school districts in cooperation with the School of Education for the purpose of continuing the search for effective alternatives for reading and related language arts instruction in the classroom.

CONCLUSIONS

1. This study provided further evidence that the practice of employing the Initial Teaching Alphabet as an alternative for traditional orthography in the early stages of reading instruction was valid. However, the new alphabet was not necessarily more effective than the traditional one, particularly for boys and girls who experienced difficulty with beginning reading instruction. It would seem

that research concerned with the further development and use of a simplified and regularized writing system, as suggested by John Downing, would be entirely justified.

2. The ITAA demonstrated one singular advantage over LEA. Teachers using the simplified alphabet had to provide two intensive periods of instruction in the development of skills required for adequate word recognition. The second period occurred, for the most part, during the second year when most young people made the transfer from ITAA to TO. Obviously, teachers in LEA and BRA continued with a word study instruction throughout the second and third years; however, the purposes for conducting these programs were not nearly as demanding or crucial as in ITAA. The fact that ITA-oriented instruction, in this study as well as others, continued to yield high scores on word study tests demonstrated the value of purposeful and intensive periodic reviews of basic word attack skills throughout the primary grades.

3. ITAA And LEA subjects read more books and had more time for creative expression without failing to develop most basic skills afforded BRA children in more formalized programs. It was reasonable to assume that with further experience and training, teachers in the two experimental programs would develop more effective instructional practices.

4. A study of the achievement of young people among the various classrooms in each approach tended to highlight, once more, the important role of the teacher. However, it would be naive to assume that instructional methodology had little to do with the changes in the academic behavior of children. The experimental approaches with the emphasis upon divergent thinking and individualized instruction

extended the range and quality of the teaching strategies used in the classroom according to teacher reports. Experimental teachers expressed a high regard for curriculum adjustments which gave them a more significant role in developing, planning and guiding the language arts activities for their student body.

5. Children who were encouraged to write on topics of interest and concern to themselves throughout the primary grades developed considerable satisfaction and interest in creative writing evidenced by their classroom behavior. What is more, they enjoyed reading what other class members had written. Those young people who started with dictation early in 1964 (first grade) and gradually assumed responsibility for writing on their own within a few months after school began, developed an attitude of independence and self-reliance which provided teachers with the time needed to work on specific learning problems. It appeared that the more young people wrote, the more they read. What is more, their spelling, as test data in this study confirmed, showed marked improvement over those who wrote less. It was apparent, however, that the teaching-learning strategies for assisting young people in the development of grammatical skills used in this research needed careful study and review.

6. The consistently high achievement of boys on tests concerned with science and social studies concepts suggested valuable clues as to the kinds of materials and experiences which might be used to motivate and direct their learning in the early primary grades. The free flow of language, which science experimentations and social studies explorations invariably stimulate, could serve many areas of the curriculum. It was conceivable that the consuming interest of boys in

science and social studies topics could provide the catalyst for more rapid growth in spelling, reading, and related language arts.

7. The vocabulary and language maturation studies, although very limited, suggested effective ways of obtaining evidence of significant changes in children's oral and written expression over a two-year period of time. Further application of Hunt's Indices and similar devices for studying children's language development should provide teachers with insights as to the kinds of behavior which result from various curriculum practices intended to strengthen or extend the language abilities of young people.

8. Classroom teachers do not have to follow instructions found in teachers' manuals of basal series in order to do an effective job in teaching reading and related language skills. The programs which accelerated the introduction of word recognition skills in first grade as well as practices which encouraged freedom of writing and reading throughout the primary grades offered suitable and effective alternatives for instruction in specific areas. Adequate provisions for periodic directed reading experiences used in this experiment provided young people with the assistance they needed to develop a reading-thinking-study plan.

9. The concept of extending the range of alternatives for effective learning in the classroom has application to in-service programs for teachers. This project demonstrated the feasibility of school districts working cooperatively in planning and organizing programs for teacher training.

APPENDIX

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INSTRUCTIONAL MATERIAL

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Appendix A

Principal _______________
School _______________
District_______________

SCHOOL EVALUATION
of
OAKLAND UNIVERSITY RESEARCH PROJECT

Grades Two and Three

Directions: Please respond candidly to the following questions. We should like to telephone you next week in order to record your responses in our report to the USOE.

1. How would you evaluate the effectiveness of the research project in your school?

   1. Very effective __________
   2. Probably effective __________
   3. Undecided __________
   4. Probably not effective __________
   5. Ineffective __________

2. Are the research teachers continuing to use the program developed in the research project?

   1. Definitely __________
   2. To some extent __________
   3. Undecided __________
   4. Probably not __________
   5. Definitely not __________

3. Did the research program affect other teachers in your school?

   1. Definitely __________
   2. To some extent __________
   3. Undecided __________
   4. Probably not __________
   5. Definitely not __________

4. To what extent have other teachers used the concepts developed in this program?

   1. Extensively __________
   2. Occasionally __________
   3. Undecided __________
   4. Probably not __________
   5. Not at all __________

5. Did the young people in this study make more effective use of the library?

   1. Read more trade books __________
   2. Probably read more books __________
   3. No change noted __________

Appendix A
continued

6. Was it necessary to purchase or borrow new curriculum materials to conduct this experiment?

    1. Extensively ________
    2. Moderate Number ________
    3. None ________

7. Did the parents of the young people express interest and support for the method employed in the project?

    1. Definitely ________
    2. To some extent ________
    3. None ________

8. Did you experience difficulty in modifying the curriculum in your school?

    1. Extensive ________
    2. Little ________
    3. No more than usual ________
    4. None ________

9. What changes were necessary in your program?

    Spelling ________________
    Reading ________________
    English (writing,
      oral language) ________________
    Art and Music ________________
    Science ________________
    Social Studies ________________

10. What are the strengths of this program?

    What are its weaknesses?

Teacher____________________
School____________________
District____________________

Appendix B

BOOK RECORD SUBMITTED BY TEACHER
per grade (1965 - 1966)

Books read completely includes books read both in and out of school and includes all books other than the basal readers being used for instructional purposes if this is the practice. It also means that the entire book has been read.

Books read partially means those books listed by the pupil and showing that he did not read the entire book.

Approximate Number of Volumes

Classroom Book Collection Yes______ __________ No _________
School Library Yes______ __________ No _________
School Librarian Full Time________Part time____None_______

Pupil	Number of Books Read Completely	Number of Books Read Partially
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		

Appendix C

YOUR NAME ____________________

Name of the Book	Author	Date	Did you read all the book?	How many pages?	Did you like the book?
1.					__very much __it was o.k. __not at all
2.					__very much __it was o.k. __not at all
3.					__very much __it was o.k. __not at all
4.					__very much __it was o.k. __not at all
5.					__very much __it was o.k. __not at all
6.					__very much __it was o.k. __not at all
7.					__very much __it was o.k. __not at all
8.					__very much __it was o.k. __not at all
9.					__very much __it was o.k. __not at all
10.					__very much __it was o.k. __not at all

Appendix D

Name ______________________________ Book's Name ______________________

Date __________________________ ______________________

I think this book was:

__________ Fun.

__________ All right.

__________ Boring.

__________ Awful.

Name ______________________________ Book's Name ______________________

Date ______________________________ ______________________

I liked this book because: ______________________________

____

____

- -

Name ________________________ Book's Name ______________________

Date ________________________ ______________________

I enjoyed this book because: ____________________________

____

____

Appendix D
continued

Name ______________________ Book's Name ______________________

Date ______________________ ______________________

I read this book because:

_______ I like the author.

_______ My friend read it.

_______ I like this kind of story.

_______ The pictures were interesting.

_______ I heard it before.

_______ I don't know.

Name ______________________ Book's Name ______________________

Date ______________________ ______________________

I didn't finish this book because:

_______ It's too long.

_______ It wasn't interesting.

_______ I didn't have time.

_______ It was too hard.

_______ It was too easy.

_______ I wanted to read another book.

_______ I don't know.

Appendix D
continued

Name ______________________ Book's Name ______________________

Date ______________________ ______________________

I didn't finish this book because ______________________

____

____

Appendix E

AN INVENTORY OF READING ATTITUDE

Yes No 1. Do you like to read before you go to bed?

Yes No 2. Do you think that you are a poor reader?

Yes No 3. Are you interested in what other people read?

Yes No 4. Do you like to read when your mother and dad are reading?

Yes No 5. Is reading your favorite subject at school?

Yes No 6. If you could do anything you wanted to do, would reading be one of the things you would choose to do?

Yes No 7. Do you think that you are a good reader for your age?

Yes No 8. Do you like to read catalogues?

Yes No 9. Do you think that most things are more fun than reading?

Yes No 10. Do you like to read aloud for other children at school?

Yes No 11. Do you think reading recipes is fun?

Yes No 12. Do you like to tell stories?

Yes No 13. Do you like to read the newspaper?

Yes No 14. Do you like to read all kinds of books at school?

Yes No 15. Do you like to answer questions about things you have read?

Yes No 16. Do you think it is a waste of time to make rhymes with words?

Yes No 17. Do you like to talk about books you have read?

Yes No 18. Does reading make you feel good?

Yes No 19. Do you feel that reading time is the best part of the school day?

Yes No 20. Do you find it hard to write about what you have read?

Yes No 21. Would you like to have more books to read?

Yes No 22. Do you like to read hard books?

Yes No 23. Do you think that there are many beautiful words in poems?

Yes No 24. Do you like to act out stories that you have read in books?

Yes No 25. Do you like to take reading tests?

Appendix F

GATES WORD PRONOUNCIATION TEST

EXAMINER'S COPY

DIRECTIONS: Have the child read the words out loud. Tell him you would like him to read some words for you. If he fails the first time, ask him to try the word again. Continue until ten consecutive words have been missed. As the words become difficult, special care should be taken to encourage the child. The score is one point for each word correctly pronounced on the first trial, one-half point for each word correctly pronounced on the second trial. (Note: 9-1/2 correct would be scored as 10.)

---

1. so
2. we
3. as
4. go
5. the
6. not
7. how
8. may
9. king
10. here
11. grow
12. late
13. every
14. about
15. paper
16. blind
17. window
18. family
19. perhaps
20. plaster
21. passenger
22. wander
23. interest
24. chocolate
25. dispute
26. portion
27. conductor
28. brightness
29. intelligent
30. construct
31. position
32. profitable
33. irregular
34. schoolmaster
35. lamentation
36. community
37. satisfactory
38. illustrious
39. superstition
40. affectionate

Child's name: ______________________ Test date ___ ___ ___

Examiner: ______________________ Birth date ___ ___ ___

Age ________

Appendix G

Second Grade Written Language Measures
USOE Cooperative Research Project

Directions to the Classroom Teacher

General Information

You are being asked to obtain one writing sample from each pupil in your classroom. We wish to emphasize the necessity of following the directions and procedures exactly.

As you realize, many other teachers throughout the nation will also be asked to obtain writing samples from their pupils. It is necessary, therefore, that these samples be obtained in all classrooms at approximately the same time and by following the same directions.

You are requested to obtain the first writing sample (Restricted Stimulus Measure) on (within the ten days of testing, one year from previous year's testing.)

DIRECTIONS--RESTRICTED STIMULUS MEASURE

Classroom Situation

No attempt should be made to enrich your normal room display through the use of word lists, pictures, dictionaries, etc. The classroom conditions should approximate those normally found in your daily writing activities.

Materials

The writing paper and pencils customarily used in your classroom should be used in obtaining this sample.

Identification

The pupil's name, teacher's name, and the school should be indicated on each pupil's paper. In some cases, you might initial the back of each paper, or a code number may be assigned by your Project Director.

Teacher Directions to the Pupils

(1) When all have finished writing name, etc., say . . . . "Now put your pencils down. I am going to read a story about a frog named Hoppy. I want you to listen closely for I am going to omit the ending. When I have finished reading, I want you to take your pencil and tell how you think the story should end.

"You will need to listen very carefully because I can't help you write this story. If you can't spell a word, write it the way it sounds. Are there any questions?"

(If the question arises about asking for additional paper, tell the children that they may use as much paper as they feel is necessary. When two or three sheets are used, please see to it that they are properly coded and stapled.)

"Ready....Listen....Here is the story."

Hoppy was the most unusual frog that ever lived in Blue Swamp. Hoppy was different because of his color. All of the other frogs had brown skin, but not Hoppy. No, sir, he was a purple frog. He was different, too, because he never worried about anything. Life for Hoppy was just fun, fun, fun. But the thing that really made him different was that he turned somersaults instead of hopping and jumping as the other frogs did. This made the other frogs jealous, but Hoppy did not care. He was having fun.

One day Hoppy was hopping and somersaulting along, having fun like he always did, when he saw Racky, the Raccoon, hiding up in a tree.

"Hey, Racky," Hoppy shouted, "what are you doing up in the tree? Why don't you come down and have some fun with me?"

"Oh, no," said Racky, "Willie Crocodile is looking for his supper and I'm staying right here until it's safe to come down."

"Suit yourself," said Hoppy as he hopped along.

Soon he saw Brownie, the mouse, digging a hole in the ground.

"Hey, Brownie," yelled Hoppy, "how come you are digging that hole? Why don't you stop a while and play with me."

"No sir," replied Brownie, " Willie Crocodile is looking for his supper, and I'm going to hide until it's safe to come out again."

"Well, suit yourself," said Hoppy as he hopped along.

By and by, Hoppy met Mr. Owl. He was perched on a limb just above Hoppy's head.

"Oh, no," said Mr. Owl, "it's not safe to be funnin' especially when Willie Crocodile is looking for his supper. You'd better find a place to hide."

"Well, maybe so," replied Hoppy, "but I don't have time to hide, not when I can have fun instead." And he hopped along.

By now Hoppy was feeling real happy. He was jumping higher and higher as he went along. He jumped and turned over and over. Wheeee! He was having fun.

In his excitement, Hoppy didn't notice that Blue Swamp had become very quiet. It wasn't until he stopped to catch his breath that he noticed how quiet things really were. Not even the leaves stirred. He didn't know what to make of it.

Suddenly the silence was broken by a sqeaking sound. It was Brownie running along side him! All he kept saying was, "Run for your life Hoppy" Run!" Then Brownie scurried as fast as he could back to his hole in the ground.

Racky, the raccoon, peeped out through the leaves of the tree he was hiding in. "Yes, yes, you'd better hurry Hoppy."

"Hoot, hoot!" cried Mr. Owl, "Go, Hoppy, before it's too late."

(2) Upon completion of the reading say . . .

"That's as much of the story I can tell you. Now you tell me what you think happened."

(3) Once the children begin to write, begin timing them, They have twenty (20) minutes writing time. Stop them at the end of twenty (20) minutes. Children who finish ahead of time may go on to something elee. Their papers should be collected upon finishing. Please try to keep those who

> finish early from interrupting those who are still writing. At the end of twenty (20) minutes writing.. ..say "Please stop writing."

It is particularly cautioned that no specific titles be presented, nor should pictures or other stimuli be employed.

Other Procedures

No spelling help should be provided during the writing period. If pupils request spelling assistance, they should be told to try to spell the word and then encouraged to proceed.

If pupils normally use a simplified dictionary or write from display flash cards or use a speller, such practices may be allowed.

Under no circumstances, however, should you correct misspellings, give ideas, or assist the pupils beyond the point of general encouragement.

Time Limit

Following the heading of the paper, 20 minutes should be allowed for the pupils to finish their stories. Papers of pupils who finish early should be inconspicuously collected and a coloring exercise or a similar silent activity should be provided for the remainder of the 20 minutes.

Written Sample Identification

At the end of 20 minutes, all stories should be collected, packaged, and clearly labeled:

RESTRICTED STIMULUS SAMPLE (Date________________)

You are not to correct these stories; they will be corrected and scored by the Project Director's Staff who will apprise you of the correction procedures should you desire this information.

CORRECTION PROCEDURES

MECHANICS RATIO SCALE:

It is suggested that the papers be corrected by three staff members. Corrections should be made for:

Capitalization
- Red (ball point) circles should be drawn around all possible capitalizations
- If the pupil has capitalized correctly, a red diagonal line should be drawn through the circle.
- The mechanics-ratio score for capitalization will be the number correct over the number possible.
- Score:
  - 1 point for each correct capital in the title.
  - 1 point for each correct capital at the beginning of a sentence.
  - 1 point for each correct capitalization of a proper name.
  - 1 point for each correct capitalization of a day or month.
  - 1 point for each correctly capitalized "I."

Punctuation
- Blue (ball point) circles should be drawn around all possible punctuations.
- If the pupil has punctuated correctly, a blue diagonal line should be drawn through the circle.
- The mechanics-ratio score for punctuation will be the number correct over the number possible.
- Score:
  - 1 point for each correct (.) period.
  - 1 point for each correct (?) question mark.
  - 1 point for each correct (!) exclamation mark.
  - 1 point for each correct (" ") set of quotation marks.
  - 1 point for each correct (,) comma in a direct quote.

Indentation - Green (ball point) circles should be drawn around the first word of all possible indentations.

- If the pupil has indented correctly, a green diagonal line should be drawn through the circle.
- Score: - 1 point for each correctly indented paragraph.

TOTAL MECHANICS-RATIO SCORE

The total mechanics-ratio score should be recorded as per cent: (6 1/2 = 50%, 25/32 = 70%). The obtained per cent of mechanics accuracy should be recorded on Card 2 in the columns which will be specified by the Coordinating Center.

Spelling - Tally the number of spelling errors to the right of of each line.

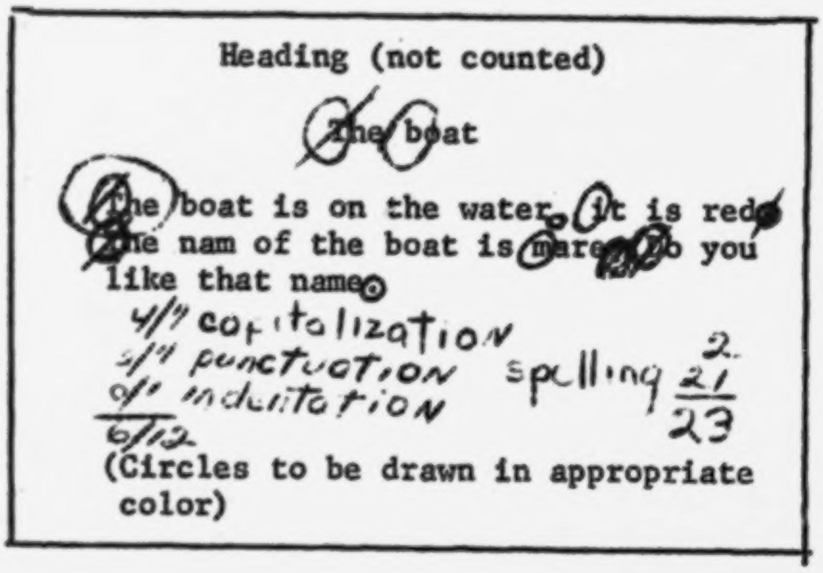
- A word incorrectly capitalized should be recorded as as a spelling error.
- Subtract the number of errors from the total number of running words.
- Score as number of words spelled correctly over total number of running words.

TOTAL SPELLING-RUNNING WORD COUNT

The total number of words correctly spelled should be recorded on Card 2 in those columns which will be specified by the Coordinating Center.

The total number of running words should be recorded on Card 2 in those columns which will be specified by the Coordinating Center.

Sample:



Heading (not counted)

The boat

The boat is on the water it is red
The nam of the boat is mare do you
like that name

4/4 capitalization
2/4 punctuation
0/4 indentation
6/12

spelling 2
21
23

(Circles to be drawn in appropriate color)

RESEARCH TEAM #2

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=10	N=13	N=19	N=17	N=6	N=9
Stanford Achievement Test						
Word Meaning	27.70	31.08	26.79	27.88	27.00	27.44
Para. Meaning	45.20	53.62	42.00	46.24	35.00	44.22
Sci. & Soc. Stud. Concepts	24.42	29.92	25.53	28.24	28.83	26.78
Spelling	20.00	28.07	22.21	24.24	20.17	21.67
Word Study	47.67	58.54	46.84	48.00	39.83	52.33
Language	48.33	64.08	43.68	53.94	36.00	51.44
Arith. Concepts	29.67	45.00	26.84	33.06	19.00	41.33
Arith. Comp.	29.16	40.69	25.39	32.88	27.33	32.44
Pintner-Cunningham	50.91	51.00	45.63	45.63	48.80	49.22
No. of Books Read	2.40	78.40	21.53	87.71	12.17	56.56
		SMALL SAMPLE				
	N=2	N=3	N=6	N=4	N=2	N=4
Gilmore - Accuracy	63/00	54.67	33.33	34.00	28.00	37.00
Rate	123.00	122.00	108.17	135.00	87.00	148.50
Gates Word List	36.50	35.00	26.67	34.25	25.50	32.50

RESEARCH TEAM # 3

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=16	N=14	N=13	N=14	N=18	N=16
Stanford Achievement Test						
Word Meaning	16.44	24.50	18.61	23.86	17.28	22.56
Para. Meaning	28.56	40.29	32.00	38.86	30.61	36.13
Sci. & Soc. Stud. Concepts	18.31	25.29	21.84	25.29	18.28	23.38
Spelling	11.63	19.93	13.61	20.57	9.44	8.23
Word Study	33.25	43.07	33.69	39.43	31.56	33.81
Language	32.94	43.79	38.38	46.00	38.22	41.56
Arith. Concepts	15.75	27.86	20.38	24.00	17.22	25.25
Arith. Comp.	15.81	27.64	17.69	26.00	16.50	24.25
Pintner-Cunningham	36.29	36.29	40.00	40.67	38.55	38.18
No. of Books Read	4.81	7.36	11.46	3.00	5.11	-
SMALL SAMPLE						
	N=7	N=4	N=5	N=4	N=	N=
Gilmore - Accuracy	37.71	45.25	35.00	40.50	-	53.25
Rate	76.29	115.50	86.40	100.50	-	117.00
Gates Word List	25.00	31.00	21.40	29.75	-	31.00

RESEARCH TEAM # 4

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=21	N=19	N=22	N=19	N=14	N=11
Stanford Achievement Test						
Word Meaning	24.57	28.78	24.36	27.31	24.79	28.00
Para. Meaning	39.75	45.84	41.23	45.73	43.71	45.64
Sci. & Soc. Stud. Concepts	20.05	24.10	23.45	27.21	26.08	24.18
Spelling	18.67	23.47	19.73	25.05	19.21	21.09
Word Study	41.14	47.05	46.82	46.37	49.43	48.64
Language	51.76	50.68	57.86	53.79	49.71	48.73
Arith. Concepts	21.52	36.26	25.00	48.21	34.93	31.73
Arith. Comp.	26.71	30.68	25.09	31.63	36.43	27.19
Pintner-Cunningham	37.90	37.90	41.81	41.80	39.87	39.87
NO. of Books Read	8.71	39.35	8.42	75.47	11.14	189.27

SMALL SAMPLE

	N=6	N=4	N=6	N=2	N=6	N=4
Gilmore - Accuracy	48.67	53.75	51.67	32.00	40.50	41.75
Rate	100.00	136.50	91.00	120.00	102.00	127.50
Gates Word List	32.17	36.75	33.17	36.00	25.83	33.25

RESEARCH TEAM # 5

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=18	N=14	N=27	N=26	N=18	N=14
Stanford Achievement Test						
Word Meaning	15.17	24.24	23.30	26.58	19.44	26.29
Para. Meaning	24.00	40.79	36.07	40.04	30.11	28.07
Sci. & Soc. Stud. Concepts	19.50	23.21	21.50	24.15	18.22	18.29
Spelling	9.00	19.50	16.74	19.96	13.61	16.86
Word Study	33.44	44.79	42.85	40.81	37.94	28.46
Language	32.33	45.57	39.25	43.42	37.06	33.54
Arith. Concepts	14.00	33.71	25.74	33.65	19.50	19.00
Arith. Comp.	17.76	30.71	22.38	28.46	14.67	16.79
Pintner-Cunningham	40.53	40.53	41.69	41.72	37.39	37.39
No. of Books Read	1.65	75.60	17.52	74.62	47.78	110.93
SMALL SAMPLE						
	N=6	N=4	N=6	N=4	N=6	N=4
Gilmore - Accuracy	25.17	49.25	38.67	39.50	38.50	54.50
Rate	104.20	95.75	128.83	145.25	90.50	100.00
Gates Word List	20.83	27.00	27.83	31.50	24.00	28.00

RESEARCH TEAM #6

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=11	N=9	N=24	N=20	N=15	N=13
Stanford Achievement Test						
Word Meaning	18.91	21.22	16.13	23.75	13.27	23.54
Para. Meaning	28.75	30.88	24.46	36.35	20.38	36.69
Sci. & Soc. Stud. Concepts	22.88	20.30	16.71	21.47	19.00	28.31
Spelling	16.30	20.90	10.21	19.90	7.67	15.31
Word Study	34.44	37.80	36.00	41.15	25.50	44.00
Language	34.40	43.20	33.92	41.70	31.25	42.00
Arith. Concepts	22.30	34.50	21.96	33.70	18.67	33.75
Arith. Comp.	17.80	25.78	19.96	29.25	16.44	34.92
Pintner-Cunningham	38.29	37.85	37.91	38.23	40.69	40.69
No. of Books Read	-	53.91	4.00	51.75	8.87	48.77
		SMALL SAMPLE				
	N=5	N=3	N=6	N=4	N=3	N=3
Gilmore - Accuracy	24.80	29.33	31.67	36.00	31.67	37.33
Rate	81.60	124.00	77.00	138.00	70.00	102.00
Gates Word List	21.60	28.67	20.33	34.25	21.00	28.67

RESEARCH TEAM # 7

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=20	N=16	N=11	N=9	N=24	N=5
Stanford Achievement Test						
Word Meaning	25.20	28.75	23.55	28.22	20.42	25.20
Para. Meaning	39.06	48.56	35.73	51.00	32.92	42.20
Sci. & Soc. Stud. Concepts	23.22	26.19	21.09	24.56	18.63	27.20
Spelling	22.33	24.88	22.09	26.56	19.38	21.40
Word Study	42.95	52.38	42.91	53.44	38.71	45.60
Language	42.95	52.38	42.91	53.44	28.71	45.60
Arith. Concepts	26.47	37.56	29.00	47.44	25.96	33.00
Arith. Comp.	23.63	32.44	23.70	31.78	18.25	26.40
Pintner-Cunningham	41.32	41.32	40.00	40.00	39.42	39.42
No. of Books Read	8.05	32.25	4.27	66.78	18.00	14.00

SMALL SAMPLE

	N=6	N=4	N=5	N=3	N=3	N=
Gilmore - Accuracy	42.33	73.75	41.20	65.00	34.33	-
Rate	100.00	111.00	111.60	108.00	86.00	-
Gates Word List	31.00	35.00	31.00	36.67	25.33	-

RESEARCH TEAM # 8

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=18	N=13	N=20	N=16	N=27	N=22
Stanford Achievement Test						
Word Meaning	16.56	21.92	18.42	24.81	17.07	20.45
Para. Meaning	24.33	34.52	31.15	41.19	27.07	35.29
Sci. & Soc. Stud. Concepts	16.22	18.15	18.85	21.19	19.11	20.73
Spelling	13.28	18.42	10.80	18.69	8.52	14.32
Word Study	36.33	41.08	36.05	44.75	29.19	30.50
Language	33.83	36.21	34.20	41.50	31.93	39.50
Arith. Concepts	17.11	29.17	18.05	31.25	21.85	23.27
Arith. Comp.	17.50	23.14	18.00	28.94	19.67	22.00
Pintner-Cunningham	34.67	34.67	38.74	39.18	35.54	35.67
No. of Books Read	11.67	118.00	24.80	153.12	1.81	36.64
SMALL SAMPLE						
	N=6	N=4	N=5	N=3	N=4	N=4
Gilmore - Accuracy	34.83	33.00	33.40	33.33	30.75	40.50
Rate	94.00	109.50	105.60	104.00	87.00	138.00
Gates Word List	24.67	33.00	23.00	34.67	20.92	28.75

RESEARCH TEAM # 9

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=27	N=26	N=17	N=17	N=23	N=20
Stanford Achievement Test						
Word Meaning	21.70	27.00	24.00	28.18	22.21	28.19
Para. Meaning	36.93	46.12	40.59	46.41	34.21	46.75
Sci. & Soc. Stud. Concepts	22.04	26.54	21.41	26.06	20.09	28.65
Spelling	18.58	21.69	18.41	23.18	17.96	24.45
Word Study	44.73	51.92	48.24	47.00	41.63	45.95
Language	42.00	52.27	45.76	50.73	39.63	54.15
Arith. Concepts	22.84	37.12	22.18	37.53	19.88	34.53
Arith. Comp.	25.07	35.96	22.64	33.18	20.00	32.60
Pintner-Cunningham	43.19	43.19	41.83	41.83	42.09	42.09
No. of Books Read	2.29	99.04	9.06	89.35	10.08	36.73
		SMALL SAMPLE				
	N=6	N=3	N=7	N=4	N=5	N=3
Gilmore - Accuracy	33.67	55.33	52.14	84.50	38.00	77.67
Rate	92.00	78.00	108.00	129.00	110.40	106.00
Gates Word List	23.83	32.67	28.57	36.00	24.60	35.00

RESEARCH TEAM # 10

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=16	N=13	N=13	N=10	N=26	N=6
Stanford Achievement Test						
Word Meaning	21.88	26.54	24.31	28.80	17.96	22.83
Para. Meaning	35.13	44.77	38.23	45.40	25.62	37.17
Sci. & Soc. Stud. Concepts	21.31	26.85	21.00	26.09	16.27	20.50
Spelling	15.81	19.62	18.00	21.64	11.20	18.67
Word Study	47.00	50.00	47.38	49.91	38.38	42.33
Language	40.69	47.31	37.92	48.55	35.23	43.00
Arith. Concepts	25.69	43.23	19.85	32.60	17.08	23.50
Arith. Comp.	20.56	29.62	21.69	30.55	18.69	25.67
Pintner-Cunningham	43.24	43.24	45.54	45.54	42.44	41.20
No. of Books Read	9.53	233.08	33.69	61.50	-	-
			SMALL SAMPLE			
	N=4	N=3	N=6	N=3	N=	N=
Gilmore - Accuracy	54.25	50.67	48.67	64.33	-	-
Rate	81.25	114.00	76.00	90.00	-	-
Gates Word List	30.50	32.00	29.83	35.00	-	-

RESEARCH TEAM #11

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=24	N=21	N=20	N=19	N=17	N=17
Stanford Achievement Test						
Word Meaning	16.50	23.33	21.90	24.16	16.71	25.59
Para. Meaning	28.96	35.76	35.25	39.63	30.82	43.18
Sci. & Soc. Stud. Concepts	16.83	24.38	18.55	23.79	17.24	23.94
Spelling	11.42	16.19	16.75	20.74	15.29	22.35
Word Study	35.79	43.62	37.00	39.47	48.71	50.94
Language	32.71	42.43	39.00	43.74	39.88	53.18
Arith. Concepts	21.88	34.10	18.10	27.79	25.82	40.76
Arith. Comp.	16.79	26.10	22.40	27.89	20.82	28.18
Pintner-Cunningham	40.48	40.49	41.40	41.32	38.82	39.00
No. of Books Read	12.33	25.38	18.35	52.16	15.47	38.59
		SMALL SAMPLE				
	N=6	N=4	N=6	N=4	N=5	N=4
Gilmore - Accuracy	37.83	43.75	44.00	38.75	39.00	45.75
Rate	84.00	130.50	83.00	118.50	92.40	133.50
Gates Word List	24.33	34.00	22.67	28.25	30.40	36.25

RESEARCH TEAM #12

SECOND AND THIRD GRADE - - MEAN SCORES

	ITAA		LEA		BRA	
	Grade II	Grade III	Grade II	Grade III	Grade II	Grade III
	N=21	N=20	N=17	N=8	N=19	N=16
Stanford Achievement Test						
Word Meaning	17.05	21.60	14.76	23.62	21.20	27.56
Para. Meaning	25.42	34.95	22.65	38.88	35.25	42.44
Sci. & Soc. Stud. Concepts	17.95	20.50	19.53	24.38	18.89	25.44
Spelling	13.95	16.95	10.35	17.38	16.32	25.26
Word Study	39.00	38.55	28.94	41.50	41.95	44.00
Language	32.43	39.40	35.47	54.50	39.50	48.44
Arith. Concepts	12.24	24.10	13.24	31.88	21.06	34.00
Arith. Comp.	14.24	21.85	17.18	26.00	23.17	28.19
Pintner-Cunningham	32.85	33.19	38.53	38.53	39.10	39.10
No. of Books Read	-	77.65	-	215.38	-	69.88

SMALL SAMPLE

	N=4	N=3	N=2	N=2	N=3	N=
Gilmore - Accuracy	35.00	53.00	27.50	48.00	60.00	-
Rate	73.50	104.00	105.00	70.00	118.00	-
Gates Word List	25.50	30.67	-	27.00	28.67	-